

THIRD SERIES, VOL. 60 NUMBER 8

JUNE 1953

# THE JOURNAL OF THE ROYAL INSTITUTE OF BRITISH ARCHITECTS

66 PORTLAND PLACE LONDON W1 • TWO SHILLINGS AND SIXPENCE

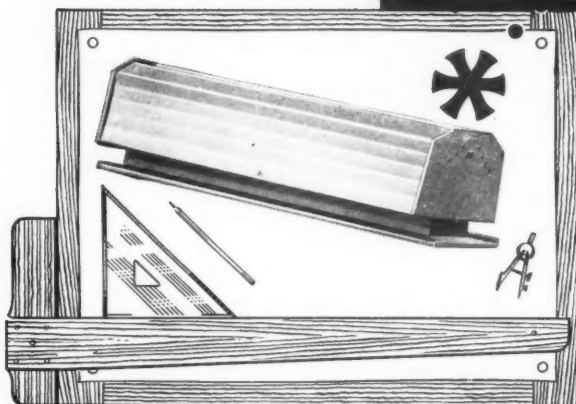


*The R.I.B.A. building floodlit and decorated for the Coronation festivities*

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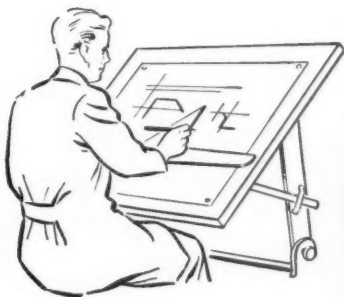
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R.I.B.A. JOURNAL



# THE JOURNAL OF THE ROYAL INSTITUTE OF BRITISH ARCHITECTS

THIRD SERIES VOLUME SIXTY NUMBER EIGHT TWO SHILLINGS AND SIXPENCE  
66 PORTLAND PLACE LONDON W1 TELEPHONE: LANGHAM 5721-7 TELEGRAMS: RIBAZO WESDO LONDON

JUNE 1953

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G.C.V.O. H.R.H. Princess Margaret, C.I. [*Hon. F.*], Archbishop of Canterbury [*Hon. F.*], Earl of Scarborough, K.G., G.C.S.I., G.C.I.E., T.D. [*Hon. F.*].  
*Baronet.* Alfred Bosson, M.P. [*F.*].  
*K.B.E. (Civil).* Sir Charles Mole, M.V.O., O.B.E., [*F.*] Director-General of Works, Ministry of Works.  
*C.B.E. E.* Maxwell Fry [*F.*], Osbert Lancaster [*Hon. A.*], Nikolaus Pevsner [*Hon. A.*], Michael Waterhouse, M.C. [*F.*], Past President R.I.B.A., Geoffrey F. Webb [*Hon. A.*].  
*K.C.V.O.* The Rt. Hon. Sir David Eccles, M.P., Minister of Works; Sir Harold Emmerson, K.C.B., Permanent Secretary, Ministry of Works.  
*C.V.O.* Eric Bedford [*A.*], Chief Architect, Ministry of Works.  
*Royal Victorian Chain.* Duke of Norfolk, K.G., G.C.V.O., [*Hon F.*].  
*C.M.G.* A. G. Stephenson [*F.*].  
*O.B.E.* A. W. H. Brown [*L.*], Deputy Chief Planning Inspector, Ministry of Housing and Local Government; W. W. Chapman [*A.*]; P. B. Chatwin [*F.*], Archaeologist; G. H. A. Hughes, Director, London Master Builders Association; C. E. Mee [*A.*]; Cecil Thomas, Sculptor; James Woodford, R.A., Sculptor.  
*M.B.E.* W. S. Bryant, Senior Architect, Ministry of Works [*A.*]; S. J. Garton, Chief Investigator, Historic Buildings, Ministry of Housing and Local Government [*L.*]; C. A. Eber [*A.*].

## Architectural Association Council 1953-54

Officers and Council of The Architectural Association for the Session 1 June 1953 to 31 May 1954 are as follows: *President:* Sir Hugh Casson, R.D.I., M.A.(Cantab.) [*F.*]. *Vice-Presidents:* Peter Shephard, B.Arch. (L'pool), A.M.T.P.I. [*A.*] and Bryan Westwood, A.A.Dipl. (Hons.) [*F.*]. *Hon. Secretary:* Gontran Goulden, T.D. [*A.*]. *Hon. Treasurer:* D. Clarke Hall, A.A.Dipl. [*F.*]. *Hon. Editor:* W. W. Atkinson, O.B.E., A.A.Dipl. (Hons.) [*A.*]. *Hon. Librarian:* Miss Barbara Price, M.A.(Cantab.), A.A.Dipl. [*A.*]. *Ordinary Members of Council:* B. L. Adams, A.A.Dipl. (Hons.) [*A.*]; A. R. F. Anderson [*F.*] (*Past President*); John Brandon-Jones, A.A.Dipl. [*A.*]; H. T. Cadbury-Brown, A.A.Dipl. (Hons.) [*F.*]; Neville Conder, M.S.I.A., A.A.Dipl. (Hons.) [*A.*]; Oliver J. Cox, A.A.Dipl. (Hons.) [*A.*]; Hon. R. A. de Yarbrough-Bateson, M.A., A.A.Dipl. [*A.*]; Alexander Gibson, A.A.Dipl. (Hons.) [*F.*]; Edward Playne, D.S.C., A.A. Dipl. [*F.*]; Graeme Shankland, M.A.(Cantab.) A.M.T.P.I., A.A.Dipl. [*A.*]; Prof. Basil Ward, Hon. A.R.C.A. [*F.*].

## The British Architects' Conference

Because the Conference is being held while this issue is in the press, the JOURNAL has departed from its usual practice of printing all the conference papers, discussions and proceedings in a single issue. In any case the fact that there are five papers instead of the usual two would have made a single issue unduly bulky and costly. Therefore this issue contains the text of the five papers, together with some of the speakers' slide illustrations, which have been circulated beforehand to conference members and the Press. Reports of the President's Inaugural Address, of speeches at the Conference Dinner and of the discussions following the papers will be published in the July JOURNAL.

## Third Congress I.U.A.

All British architects are cordially invited to take part in the third Congress of the International Union of Architects, which, as already announced, will take place in Lisbon from 20-27 September. It will open with a paper delivered by Sir Patrick Abercrombie, the President of the I.U.A., entitled 'Architecture at the Crossroads', and will afterwards split up into eight separate working groups. The conclusions reached by these groups will subsequently be presented in plenary session for general debate.

Several British architects are attending the Congress. Mr. C. H. Aslin, Vice-President R.I.B.A., will act as chairman of the School Construction Working Group, and Professor Gordon Stephenson [*F.*] and Mr. Mark Hartland Thomas [*F.*] will act as rapporteurs for the working groups dealing respectively with Town Planning and Modular Co-ordination. The Hon. Godfrey Samuel [*F.*] will serve on the Co-ordinating Committee. During the Congress, meetings of the I.U.A. Assembly, the main policy-making body of the I.U.A. will also take place.

The Bank of England has authorised the allotment of a certain amount of extra foreign currency to enable a 'reasonable number' of British architects to take part in the Congress. Full details of the programme of meetings and social functions can be obtained on application to the Secretary, R.I.B.A. Architects who wish to participate will be furnished with registration forms.

## Royal Fine Art Commission for Scotland

Mr. Ian Lindsay, A.R.S.A. [*F.*], and Professor Robert H. Matthew, C.B.E. [*A.*], have been appointed members of the Royal Fine Art Commission for Scotland.

### The Coronation

While the glow of Her Majesty's Coronation still fills the hearts of the people of the Commonwealth, we may perhaps record and comment on the contribution of the architectural profession to the dignity and splendour of this great event.

On the opposite page we reproduce—unfortunately in black and white only—the illuminated loyal address which the Royal Institute has presented to Her Majesty. It expresses to our gracious Patron the warm esteem, affection and good wishes of all architects in the Commonwealth. The badge is in gold, red, white and blue, the initial letters are in gold and red and the lettering is royal blue; the seal is impressed in the paper. The address was designed and engrossed by Miss Rosemary Ratcliff. It was enclosed in a cylinder of blue morocco leather on the lid of which were the words, in gold, 'The Royal Institute of British Architects'.

The contribution made by individual architects and teams of architects to the splendour of the occasion has been of high quality. Foremost has been that of the Ministry of Works under the direction of the Chief Architect, Mr. Eric Bedford [A], on whom the Queen has conferred the C.V.O., an acknowledgment not only to himself but to his many able assistants. The magnificent setting of the Coronation itself in Westminster Abbey, the handsome and dignified annexe, which we illustrated on the cover of the December JOURNAL, the charming official stands in Whitehall and Parliament Square and—happily brilliant idea—the slender and graceful arches in the Mall which gave scale, height and great dignity to what might otherwise have been a stand-lined corridor, all formed superb settings for this historic event.

The decorations of the Coronation processional way for the Westminster City Council by Sir Hugh Casson [F] came fully up to expectations. They provided something new in official decorations—which normally are prone to pomposity—namely a note of gaiety, almost of frivolity. They seemed to express the fact that the Sovereign is a woman, a young and beautiful woman, who may rightly be offered flowers in cornucopia and decorated lamp-standards which are as bright and inconsequential as a woman's spring hat.

We have little information on the architects who designed the many other decorations of streets and buildings. To mention a few in London would do no sort of justice to the great number of others not only in Great Britain but throughout the Commonwealth who by their skill in design expressed and enhanced the dignity and gaiety of the occasion. The architectural profession may take pride in its contribution.

The President of the R.I.B.A. had a seat in the Abbey and he, together with the Secretary R.I.B.A., received a Coronation Medal.

### Exhibition of Architectural Photography

The exhibition, which is a contribution to the centenary celebrations of the Royal Photographic Society, is to be held at the Royal Institute from 9 to 29 October inclusive. It is being arranged jointly by the R.P.S. and the R.I.B.A.

### York Summer Schools

The York Civic Trust are holding three summer schools or courses this year. Two of these are concerned with repair of ancient buildings. The General Course (7 to 19 September) is a repeat, with some improvements, of the two previous General Courses which have proved so popular. A Specialised Course on Foundations and Wall Repairs (21 to 26 September) is the first of a series intended to continue the studies already started in the General Courses. The Summer School of Architectural Study (8–22 August) is already well booked up but there are still a few vacancies. All three courses are under the direction of Dr. William A. Singleton, M.A. [A], who seems to have the knack of attracting specially distinguished lecturers. Application should be made to the Secretary, St. Anthony's Hall, York. One feature of these courses is their remarkably low cost of £14.

### Housing Medals 1953

The 1953 awards of housing medals and diplomas offered by the Minister of Housing and Local Government for the best designed local authority housing estates in England and Wales completed in 1952 have been announced. The winning schemes were chosen from 294 entries. The Minister presented the medals and diplomas at the Royal Institute on Wednesday 24 June at 2 p.m. and the winning schemes will be illustrated in the July JOURNAL. The awards are:—

*Northern Area.* Peterlee Development Corporation; Thorntree Gill Estate; Wilfrid John Scott, Dip.Arch. [F], Chief Architect to the Corporation. Helmsley R.D.C.; Elmslac Road, Helmsley; Needham, Thorp and White [FF/A].

*East and West Riding.* Wetherby R.D.C.; North Rigton; William Alban Jones [F] (Jones and Stocks [F/A]).

*North Midland.* Higham Ferrers B.C.; Upper George Street; Gotch, Saunders and Surridge [F/F]. Brackley R.D.C.; Moreton Pinkney; G. Forsyth Lawson [L] (G. Forsyth Lawson and Douglas Hilton [L/A]).

*Eastern.* East Ham County B.C.; Ingrave, Brentwood; Arthur William Walls [A], The Housing Department, East Ham. Hatfield Development Corporation; Roe Green; Lionel Brett and Kenneth Boyd [A/A]. Epping R.D.C.; The Oxleys, Harlow; Robert O. Foster [F] (Tooley and Foster [F/A]).

*London.* Westminster C.C.; Churchill Gardens, Pimlico; Powell and Moya [A/A]. Friern Barnet U.D.C.; The Hollies; Kenneth Reginald Smith, A.A.Dipl. [A].

*Southern.* Abingdon B.C.; Thames Street; Frank Russell Cox [F]; Windsor R.D.C.; Nell Gwynne Avenue, Sunninghill; Sainsbury and Chamberlain [L/F].

*South Western.* Bath C.C.; Phoenix House, Julian Road; Hugh Duckworth Roberts, A.A.Dipl. [F]. North Cotswold R.D.C.; Littleworth Estate, Chipping Campden; Thomas Robert Bateman, A.M.T.P.I. [A] (Pemberton and Bateman [F/A]).

*Midland.* Birmingham C.C.; Toronto Gardens, Harborne; David Harris Davies, M.T.P.I. [F], City Housing Department, Birmingham. Coventry C.C.; Wellington Gardens, Spon End; Donald E. E. Gibson, C.B.E., [A], City Architect, Coventry.

*North Western.* Liverpool C.C.; Southdene, Kirkby Estate; Ronald Bradbury, Ph.D., A.M.T.P.I. [F], City Architect, Liverpool. Ulverston R.D.C.; Hawksgarth, Hawkshead; Horace Nicholson, Housing Department, Ulverston R.D.C.

*South Eastern.* Crawley Development Corporation; Northgate; A. G. Sheppard Fidler, A.M.T.P.I. [F], Chief Architect to the Corporation. East Ashford R.D.C.; Chilham; Jackson and Jackson [F/A/L].

*Wales.* Swansea County B.C.; Toronto Place, Penlan; Herbert Tom Wykes, A.M.T.P.I. [F], Borough Architect, Swansea. Maelor R.D.C.; Horseman's Green, Halghton; H. Anthony Clark, F. C. Roberts and Partners [F/A].

### The Home and Surroundings Exhibition

The first copy of the Exhibition will be on view at Wrexham from 29 June to 10 July in Phillip's Café, Hope Street, then at Shrewsbury Technical College, Shrewsbury, from 14 to 25 July, and then in the Manchester City Art Gallery from 30 July to 21 August.

The second copy will be on view at Worthing in the Central Public Library from 29 June to 11 July, then in Guildford House, High Street, Guildford, from 15 to 30 July and then in Croydon Town Hall from 4 to 13 August.

The exhibition continues to attract good public attendances and notices in local newspapers. This most successful start in the Royal Institute's new exhibition policy augurs well for the success of the other exhibitions which are to follow.





The Humble and Loyal Address of  
THE ROYAL INSTITUTE of BRITISH ARCHITECTS

HER MOST EXCELLENT MAJESTY  
THE QUEEN

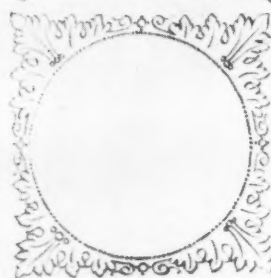


May it please Your Majesty:

WE, Your dutiful subjects, the President and Council, on behalf of the Royal Institute of British Architects & of the Allied Architectural Societies both in the British Islands and in the Commonwealth of which Your Majesty is the Head, beg leave humbly and respectfully to approach Your Majesty our most gracious & generous Patron, with the expression of our loyal congratulations on the occasion of Your Majesty's Coronation & to tender our most devoted & dutiful homage.

WE earnestly pray that Almighty God will grant Your Majesty a long peaceful and glorious reign as Head of this Commonwealth of Free Peoples, wherein the Arts may flourish, Science peacefully extend her benefits and the blessings of civilisation be showered upon your loving and loyal people.

Given under our hands and seal this first day of June one thousand nine hundred and fifty three.



*Thomas Lubbock*  
President

*Kenneth M. Cross*  
Honorary Secretary

*John E. Hall*  
Members of Council

*Richard E. Easton*  
Members of Council

*Cyril D. Briggs*  
Secretary of the Royal Institute

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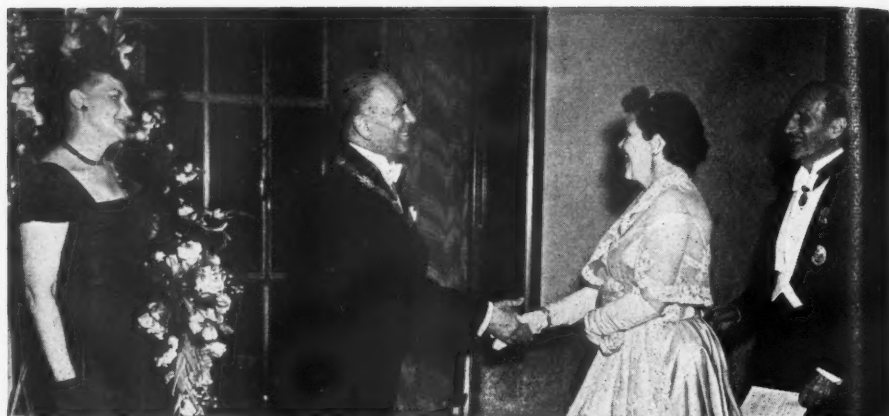
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The President and Mrs. Robertson receiving Sir George Pepler [Hon. A] and Lady Pepler

## The Coronation Reception 1953

Whatever the contributory causes may have been, the Royal Institute's Coronation Reception was generally voted to have been the most happily successful that the oldest members present could remember. From the moment when the guests saw the gay exterior of the building, with its augmented floodlighting and colourful window boxes, and passed through the flower-bedecked hall and up the staircase to be received by the President and Mrs. Howard Robertson and so into the Henry Florence Hall with its view of the flower-decked terrace, the effect was of a remarkably cheerful and decorative occasion. One distinguished visitor, accustomed to official receptions, was heard to remark that the Royal Institute's suite of public rooms formed with the staircase the finest reception suite in London. Those members who know the building only in its workaday garb would be astonished and gratified by the extent to which Mr. Wornum's fine suite of interiors is enhanced by the gay dresses of women, the glittering decorations of men, and lights, flowers and music.

Other Coronation festivities reduced the number of the more important notabilities who usually attend the Royal Institute's receptions, with the result that the proportion of members was greater than usual so that the occasion was more a gathering of members in festive mood than a welcoming of distinguished official guests. The total number of those attending was about a thousand, yet no part of the building was at any time uncomfortably crowded. This may have been so because some were attracted by a display of unusual films in the Henry Jarvis Hall, by the Library exhibition illustrating the Royal Patronage, and by the well-stocked refreshment counters in various parts of the building.

The cover picture of this JOURNAL shows the R.I.B.A. building as it appeared on the night of the reception and during the Coronation festivities. The photograph was taken for the JOURNAL by Sydney Newbery, F.R.P.S.



The President and Mrs. Robertson receiving the Lord Bishop of Southwark



The President and Mrs. Robertson receiving Mr. and Mrs. D. E. Woodbine Parish



The President and Mrs. Robertson receiving (left) Mr. F. C. Hawkes, Secretary of the Chartered Auctioneers and Estate Agents Institute, and Sir Stephen Tallents [Hon. A]



Left, Mrs. Howard Robertson. Above, the President and Mrs. Robertson receiving Mr. A. E. Middleton, [Chairman of the L.C.C., and Mrs. Middleton. Top right, Sir Howard Roberts, C.B.E., The Clerk, the L.C.C. Right, Sheriff Sidney J. Fox and Mrs. Fox in the Library Exhibition. Below left, a group on the main landing, including Mrs. C. H. Aslin and Mr. E. Harold Palmer, Chairman R.I.C.S. Quantity Surveyors' Committee. Below right, dancing in the Henry Florence Hall. Bottom left, the floodlit terrace decorations which were designed and executed

by Miss Julia Oman under the direction of Sir Hugh Casson. Bottom right, a party from the Bucks Society of Architects on the terrace



# The Architect's Contribution to Value for Money in School Building and the Role of the Ministry of Education

By S. A. W. Johnson-Marshall [A], Chief Architect, Ministry of Education

Read at the British Architects' Conference, 11 June 1953. The President in the chair

MOST OF US spend so much time grappling with our particular problems that we seldom have the opportunity to collect the evidence necessary to see how we are progressing collectively. But we can use the Ministry of Education as an observation tower—I hope not wholly ivory—from which to review the broad pattern of post-war school building. In the first part of the paper I propose to do so, but I intend to concentrate on that part of the view which might be termed 'economics', because Richard Sheppard has dealt fully with other aspects in his paper.

In his inaugural address last year the President of the R.I.B.A. referred to architecture as a service. It is pertinent to ask what kind of service the architect has rendered in the last six difficult and exciting years. The school building programme is a particularly good vehicle to use for this review, because unlike other types of building such as housing or industrial buildings, schools have been almost the exclusive responsibility of the architect. Whether they fall short of the nation's needs in terms of time, quality and price, or how far they go towards meeting them, the technical responsibility is first and foremost that of the architect.

The extent of the programme is approximately £40,000,000 a year. And that programme has *got* to be carried out in time to house the growing child population. With very few exceptions all children have so far been provided with a seat. This has meant building over 1,500 schools—a much greater effort than in any previous period of equivalent length.

Monetarily, perhaps 1949 was the critical year because the economic crisis of that autumn produced a challenging situation. The choice had to be made between fewer schools at the same price, the same number but of poorer quality or the same number and the same quality at a lower price. The profession accepted the challenge and with the whole-hearted co-operation of their educational clients they launched a carefully considered attack on costs. That attack has been continuously maintained against a rising tide of prices of both labour and materials. Its first phase comprised the reduction of the total area of the building without reducing teaching area—in fact the area devoted to teaching has in many cases increased. The second phase is directed towards the simplification of techniques and components from lavatory basins to boiler houses. It must be made clear that

the aim of the Ministry has not been just cheapness—it has been rather to encourage architects to strive after the right balance between quality and economy.

The results of their work are surprising. In 1949 secondary schools had an average area per place of 111 sq. ft. and a cost per place of over £320, which at current prices would be equivalent to over £450. Now the corresponding figures are 75 sq. ft. and £240 a place, and the quality of building is being maintained.

The average costs, in real terms, for primary and secondary schools are 45 per cent cheaper than they were in 1949. To put this another way, each school place now takes little more than half the labour and materials that it did in 1949. Furthermore, schools are slightly more economical than they were before the war.

While these figures are somewhat sensational they do not conceal any black magic. They have been attained by deliberate re-thinking of most of the familiar problems and by hard work. In both of these activities the architect has been immensely helped by working more closely than usual with a client who has made notable contributions to the better arrangement of space and who now gladly accepts the adventure of using new buildings whose planning is fundamentally different from those of 1939.

You might consider this to be a worthy achievement in any circumstances, but it must be viewed against the background of unprecedented post-war changes and shortages. Paradoxically enough these conditions have, I think, helped rather than hindered us because they have forced us to question all our accepted methods and practices and have engendered a spirit of adventure which was often lacking before the war.

It is the work of local education authorities through their public and private architects which has produced these figures, but the Ministry of Education has inevitably had to take a part in the early stage of the production line. Mr. Aslin and Mr. Loweth in their papers describe how the work is being done by local education authorities, so it might be useful if I tried to summarise the role of that part of the Ministry of Education which is responsible for building.

In 1949 it became evident that the solution of many of our problems which were labelled 'building' lay somewhere between administration, education and techniques, and that they would yield far

more readily to a combined attack by these three skills than by a series of separate attacks. The Ministry, therefore, amalgamated its administrative and technical branches responsible for building.

The hybrid, called Architects' and Building Branch, with its prime motive of shared responsibility, is a unique unit of central government. It is run jointly by a senior administrator and an architect and has senior educators working permanently with it. Its functions may be summarised under three headings:—

**Economic planning** which is concerned with the educational bid for a share of the country's capital investment and the preparation and control, in conjunction with other branches and local education authorities, of the annual building programme. Among its instruments are statistics of educational building progress, speed of building and costs.

It was realised that architects could give very much better service if they knew as far ahead as possible what buildings they had to build and when they were expected to build them. In consequence, a system of annual programming was introduced in 1949. This gives one to two years' notice to local authorities of their whole annual programme, and two to three years' notice of half their next programme. The new approach has enabled the Ministry to make a clear statement *before* the architect starts work of all the rules governing school building. These cover the Building Regulations (which have been largely re-written in terms of principle), the amount of money he will be allowed to expend on any given project, and the amount of rationed materials.

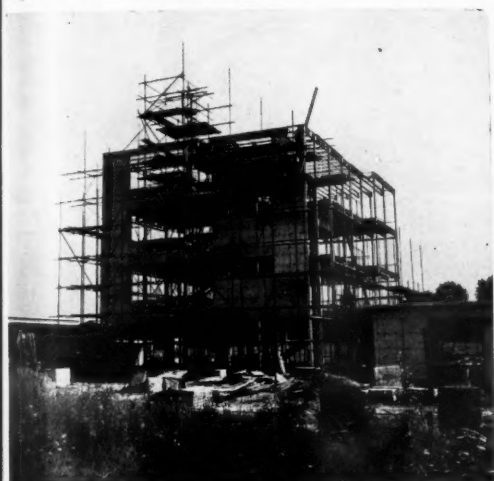
**Territorial work.** This comprises teams of architects and administrators who deal with local education authorities' building programmes and their schemes, the settling of schedules of accommodation, the discussion of schemes in their embryonic stage, and the detailed administration of timber, steel and monetary allocations; and finally, liaison with the Ministry of Works Regional Offices in order to obtain starting dates.

It has been the aim of the Ministry to try to abolish the unrewarding and unprofitable task of scrutinising the details of other architects' work and instead to concentrate on the more creative spheres of research into educational needs and their technical implications. It was logical, therefore, to abolish the compulsory sub-





Kenilworth School, Boreham Wood. County Architect's Dept., Herts. C.C. System of construction (8 ft. 3 in. grid) developed by County Architect's Dept. and Hills (West Bromwich) Ltd.



Wokingham Secondary Modern School 1952. System of construction (3 ft. 4 in. module) developed by the Development Group, Ministry of Education, and Hills (West Bromwich) Ltd. Left: the four-storey block. Right: the hall



mission of sketch designs and so to free our architects to engage in discussions at the embryonic stage of design. These discussions tend to be more constructive because they now take place at the wish of the local education authority and not under the compulsion of the Ministry.

The duty of architects engaged on territorial work (it is so named because it is organised on a territorial basis) is to circulate new ideas on school building that may have originated in the field of local authority building or in the Development Group and to collect worthwhile information during the course of their visits and discussions.

Development as we see it consists in the first place of designing to meet educational needs, either in less space or by improving facilities through a better use of space. The second is the development of building techniques, of services, fittings, furniture, etc. An essential basis for both of these is cost planning and cost analysis to which I will return later.

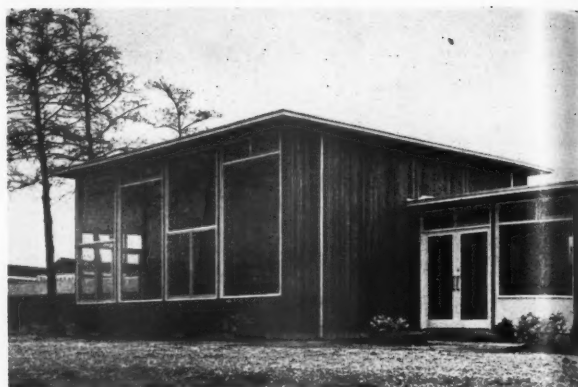
Experience showed that schools were taking too long to build. Primary schools averaged over two years and secondary schools three years. In many areas where large numbers of schools were required there was and still is an acute shortage of site labour—particularly of bricklayers and of plasterers. It is evident that if the nation's schools cannot be built fast enough or cheaply enough there is always a danger of the client reverting to huts in the interest of speed and cheapness.

The choice of labour-saving techniques available to authorities who wished to adopt them was, however, very limited; the productive capacity of the manufacturers who were already interested in this work was small in relation to the potential demand. The Ministry, therefore, concluded that additional productive capacity and a wider range of choice ought to be made available, especially to meet the growing need for secondary schools which would arise in 1953 and after. Authorities are free to choose any method of construction; the Ministry's role is confined to

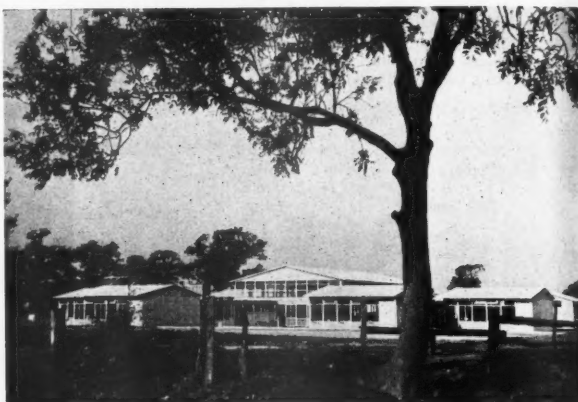
encouraging the production of systems which can be profitably used where site labour or traditional materials are scarce.

Earlier, of course, the initiative had been taken by a few local education authorities on their own. Hertfordshire in particular had a new technique of construction which halved the builder's site labour requirements. Very few authorities, however, have had the time and manpower necessary for development work, so the Ministry of Education decided to collaborate with local education authorities and with manufacturers in the design of four systems of construction.

The objectives of each of these development projects are the same; namely, to devise a labour-saving system of construction, which should be comparable in cost with any other method of building of similar quality, and capable of being used for three- or four-storey building. A variety of materials was deliberately chosen, so that all the eggs should not be in one basket and so that production capacity could be obtained from very different sources.



Prototype of 'Derwent' timber system of construction. Developed by Samuel Morrison and Partners [4] and Vic Hallam Ltd.



Tile Hill Junior School. System of construction (4 ft. grid) developed jointly by the City Architect's Dept., Coventry, Sheppard and Partners [F/AA], the Development Group, Ministry of Education, and the Bristol Aeroplane Co. Ltd.

In each case a school is being used as a vehicle for development, and it is governed by the same rules of accommodation, cost and procedure as any other job. The first project, undertaken jointly with the Berkshire County Council and Messrs. Hills of West Bromwich, has just been completed at Wokingham. This comprises a multi-storey 3 ft. 4 in. module version of the system originally developed by Hertfordshire.

The second, with a cold-rolled steel frame and stone-faced concrete and asbestos cladding, is being developed in conjunction with the Derbyshire County Architect's Department and Messrs. Brockhouse Engineering Company Limited. This system is also on a 3 ft. 4 in. module. Work on the site began in May 1953.

Aluminium is the basic material for the third system, which is being developed by the City Architect's Department, Coventry, Messrs. Sheppard and Partners [F/AA], the Bristol Aircraft Company and ourselves. The module here is 4 ft.

Finally, we have embarked on a technique whose frame is wholly made up of precast, post-tensioned, reinforced concrete units. It embraces four-storey construction, is on a 3 ft. 4 in. module and is being carried out in association with the Borough of Worthing, the County Architect of West Sussex, Messrs. Gilbert Ash and Messrs. Pre-Stressed Concrete Limited.

Our development work has not been

confined to the structure. I have already mentioned the problem of designing to meet educational needs. Each of the projects described represents in its own way an experiment in school planning which is quite as important as its technical aspects.

Besides structural development, the projects have also included work on daylighting, lighting and heating installations, on lighting and sanitary fittings, ceilings and floor finishes, colour and so on. Continuous and invaluable inspiration in every aspect of this work has been provided by the Building Research Station, whose contribution cannot be too highly praised.

The Wokingham project has been described in detail in Building Bulletin No. 8, and similar Bulletins on the other projects will, I hope, follow.

It is proper to ask who pays for the development of a system of construction. In each case a local authority is paying the price and the usual professional fees of a normal school. The manufacturers incur the cost of developing their components and have all agreed to sell their components to subsequent local authority purchasers at the same price (subject to changes in cost of labour and materials) as they are charging for the development projects. Thus on the completion of a project, or even before, all the successful items developed and tried in it will be in production and on the market

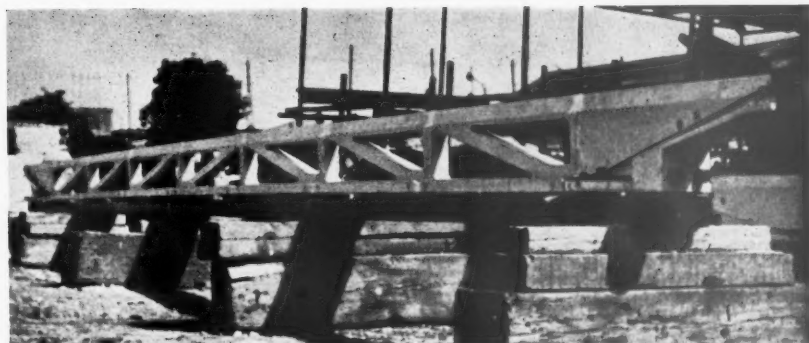
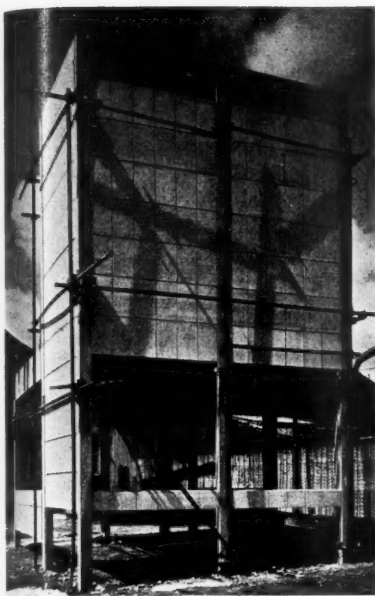
at a known price, extending the range of choice for local authorities.

In order to produce entirely new components quickly and at a reasonable price it has been necessary for quantity surveyors to develop a costing technique which enables the designer to control the cost of his article as he proceeds. This technique has been described in Bulletin No. 4 and it is sufficient to say here that we could not attempt development on any appreciable scale without it.

Before leaving the subject of the branch, may I sum up by saying that its main aim is to help local education authorities and their public and private architects to retain the initiative at a time when labour and materials are scarce, when prices are rising and when educational ideas are changing. Our slogan is value for money and if the administrator, the educator, the designer and the producer work closely and continuously together we know that we can raise quality without increasing cost.

All the indications are that if we are to continue to get higher quality buildings, quickly and at a price the nation can afford, very much more development will have to be done. Almost everything we handle, from bath taps and basins through paints to whole systems of construction, is capable of really striking improvements in this direction.

The architect's contribution here is not



Prestressed system of construction, post-tensioned on site (3 ft. 4 in. module), developed jointly by Prestressed Concrete Co. Ltd., the County Architect's Dept., West Sussex, the Development Group, Ministry of Education and Gilbert Ash Ltd. Left: mock-up for a Secondary Technical School at Worthing. Right: a main beam assembly made up of standard 3 ft. 4 in. units

confined to stream-lining a manufacturer's existing product, but is that of a man who finds out the user's real need, and who by tradition and training is the only designer concerned with the whole building and therefore with the design and price of every component used in building. As such he can make a unique contribution if he is jointly responsible with the manufacturer for the design of industrial building products. Very few architects are engaged on this type of work and yet there is ample evidence to show that it cannot be wholly successful without their contribution.

It is intended to limit the amount of development work which we undertake by the present size of our branch, but even if it were physically possible it would be undesirable to concentrate too much of this work in one organisation. Local authorities with their large programmes—and therefore with considerable potential orders—provide another field in which development can be effectively undertaken, but too few of them have so far been able to spare their best architects to work exclusively on this type of work. The private architect can make a notable contribution; for example Richard Sheppard and Geoffrey Robson in aluminium techniques and S. Morrison in timber. But if more work of this kind is essential, as I believe it to be, it is worth examining the architect's terms of reference for this new role.

In its present form our code of professional conduct allows an architect to be employed by an industrial firm but forbids him to be a member of that firm. Where he is engaged in this way he usually finds that it is almost impossible for him to attain sufficient authority to be jointly responsible for the product he helps to design. Design cannot be relegated to a subsidiary role in any successful industrial firm. Design and policy are inseparable. In his present capacity the private architect's advice is

sometimes taken but often ignored on grounds of policy or 'sales'. The result is seldom effective. If he is to play his proper role he must be allowed to be a true partner at policy level and this implies a far closer relationship with industry than is attainable by the private architect today.

If it is true that the building industry is technically 50 years out of date, then we must pass through a period of rapid and exciting change sooner or later. I believe that we have already embarked on the beginning of this transitional period. Unless the architect is in a position to take and hold the initiative throughout the field of

design he is likely to find himself more and more unhappily placed. He will be unhappy not only because he will be forced to use techniques and components designed by other people—this does not matter from a national point of view—but because the tools of his trade will be indifferently designed.

It would be ironical indeed if we owed this state of affairs to the inhibitions of a code of professional conduct which denies half the profession the opportunity of taking a leading role in perhaps the most thrilling opportunity of regaining for our country the architectural position she held in the 18th century.

## Post-War Development in School Design

By Richard Sheppard [F]

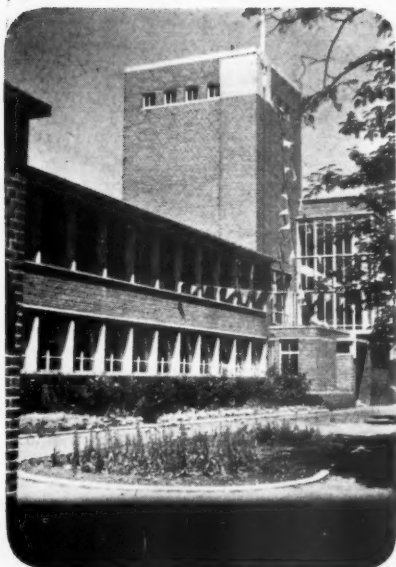
**Scope of paper.** I follow behind Mr. Johnson-Marshall. That has been the function of many of us in the last few years. His paper is, so to speak, the editorial to the unnumbered bulletin; editorials can be discursive, illuminating and witty, but the contributors coming after, borne down with facts and examples, must of necessity seem flat-footed and quotidian.

My task is to review the changes in planning, technique and design in school buildings since the war. As you all know, these have been considerable, indeed revolutionary, when applied, as they have been, in only one field of building. More important for architecture, the methods now being developed for assessing the educational problem and the experimental techniques in executing it have laid the foundations for a new approach to building for a democracy. I believe this approach, when applied to other fields, may prove to be one of the most important developments in architecture. Certainly it is the only instance I can call to mind of a long-term, comprehensive study of all aspects of a design problem. This empiric approach has achieved substantial results already and I hope will be applied to other building types.

Mr. Marshall has sketched what might be called the quantitative aspects—the numbers of school places, the cost, the administrative background. I shall deal with the buildings, the problems of planning for teaching and movement, and with the formal aspects of design which arise from these conditions. I do not propose, therefore, to follow the obvious educational pattern by considering each different class of school separately—primary, secondary and so on—but to deal with the various activities in education and to relate these to building developments. Learning and teaching are—or should be—the basis of the design of school buildings, and this is the most significant difference between the pre-war and post-war periods.

**The Pre-Butler Era.** I think it is true to say that the design of schools was dominated by what might be called architectural considerations. The architectural features visually, and architectural principles technically, dictated the design. Both of these are abstractions derived from the study of irrelevant problems arising out of the interest the early Renaissance men took in perspective. They have





Expression of formal architectural values in pre-war school. This well-detailed tower emphasises the entrance and is the focus of circulation in this school

no particular relation to school building. Thus circulation, the arrangement of corridors by which the teaching spaces were linked, was most carefully considered and the intersection of these received a visual accent. Where the two main traffic routes intersected was the tower, while the entrance hall received a special and often arbitrary architectural treatment. I say arbitrary because the occupants of the building, you will recall, entered and left through the lavatories.

There was one aspect here which is worth considering today. Such a school often had very definite individuality and character. The connoisseur of cinema construction can always tell an Odeon from a Gaumont; in the same way we knew when we were in Kent or Sussex. I doubt if we should know Hertfordshire from Derbyshire today, and a child moving from one to the other would probably see no difference. On the other hand such schools could easily be mistaken for convents or minor railway stations from their appearance. Not the least of an achievement since the war has been the development of a building type which can be identified as a school and nothing else.

A great many interesting and able experiments were made in this period—more often in building technique than in planning—and some really notable schools were erected, particularly in West Sussex and Middlesex. Such developments were less effective than they might have been because they were autonomous. A single authority, in carrying out its daily business, could not carry out detailed research into educational techniques and methods, school organisation and so on, on which such plans must rely if they are to be positive. The architects carrying out these experi-



In this example, the roof of the central space is raised to give clerestory light. Line and not the massing of form is emphasised

ments realised the difficulty of obtaining evidence and information from the educationalists—even if such information was available in a comparative form there was no adequate means of disseminating it, as there is now through the Ministry of Education's bulletins.

The competition for school designs organised by the *NEWS CHRONICLE* in 1937 was notable in many respects. For the first time, perhaps, the design of school buildings was thought sufficiently interesting to the public to warrant a national newspaper sponsoring a competition. For architects it was important in focusing attention publicly on the requirements of the children and teachers. Most of us who entered it bemused ourselves by working at circulation patterns and found out how little we actually knew about the activities in the classroom and elsewhere. Mr. Denis Clarke Hall won the major award largely by his conception of the classroom as a teaching space, and foreshadowed later developments. But this competition may be taken as illustrating the stage that was reached at this time, and the mere diversity of solutions is evidence of our confusion.

**Post-Butler.** After the war two factors combined to bring about radical changes in school-building programmes.

First, the Butler Act made the provision of accommodation for secondary education compulsory for all educational authorities. Before that individual authorities only provided such accommodation as each thought necessary and there were wide variations between one authority and another in the numbers of children receiving secondary education. The Act also extended the school age and gave additional educational facilities for both youths and adults. It also required authorities to produce long-term plans for dealing with their prob-

lems under the terms of the new Act. By creating new types of school—secondary modern, further education, comprehensive and so on—attention was directed to educational methods and techniques.

Secondly, the birth rate had increased dramatically and major population movements had occurred, with the consequence that large numbers of additional school places were urgently required.

The effect of this was to revive interest in school design problems and particularly in the provision of teaching spaces by methods which would not impinge too heavily upon the manpower and materials of the building industry. Two committees were established and deserve mention: the Wood Committee, which was set up under the aegis of the Directorate of Post-War Building during the war under the chairmanship of Sir Robert Wood; and secondly, after the war, a working party on School Construction by the Ministry of Education. Both these committees considered the problem largely with the object of treating teaching space economically in terms of labour and materials, and based their recommendations upon the classroom sizes laid down by the regulations. The result of this approach is to consider school design as a matter of the construction of rectangular spaces of uniform dimensions. It confines school development to activity within a series of cells, rather than to activity in the whole area of the building.

Useful space is the enclosed space—enclosed, that is, within four walls; and unenclosed spaces are wasteful, uneconomical and unspecialised. The object of both committees was to reduce or eliminate them and in this they succeeded. Circulation areas were certainly reduced.

Both committees had unconsciously in mind a definite type of plan and design,





Top lighting is used in this library to give even illumination over the whole floor space. This enables the layout and form of the room to be developed independently of the external walls



Side lighting low down in the external wall allows the whole floor space to be used for informal teaching



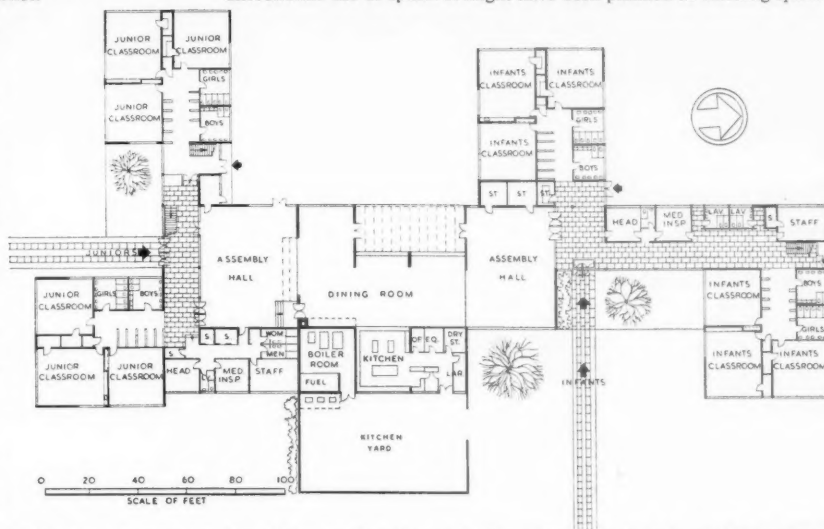
An example of side lighting similar to that in the top right photograph, but in another method of prefabricated construction



A self-contained dining-room. Being used only once a day, it is an uneconomic use of space. It might have been planned as teaching space

and thought of a school building as being ideally of one or at most two-storey construction. In this light an attempt was then made (1945-47) to find a series of standard dimensions and structural units. Several of the larger authorities, facing building programmes of what the papers call 'unparalleled magnitude', were extremely interested in the work of these committees. Altogether the way was cleared for a coherent development in planning and structure. The influence of their reports was considerable and some of the buildings they inspired are now in use. The principal architectural effect, apart from the one I have just mentioned, is that they led to more dispersed plans, to a greater separation of the different parts of a school—classrooms, assembly hall and so on.

**Present Conditions.** Three factors operate at present in the design of school buildings: (1) Increasing readiness of local authorities to experiment with new methods of construction and material and to consider their problems against a long-term back-



In this plan the space used for dining can be either a platform extension of the lower hall or one or two teaching spaces separated from the halls by folding screens

ground. This is partly due to scarcity of orthodox materials and labour and also to the need for speed of construction, particularly in new housing areas.

(2) Experimental attitude towards teaching methods and organisation of space. The demands for increased economy in space have stimulated development in this way and forced educationalists to consider space in relation to the frequency and duration of use as well as to specialist requirements in teaching. Hence the conception of space for dual and multiple uses and the demand for flexibility in plan arrangements and construction.

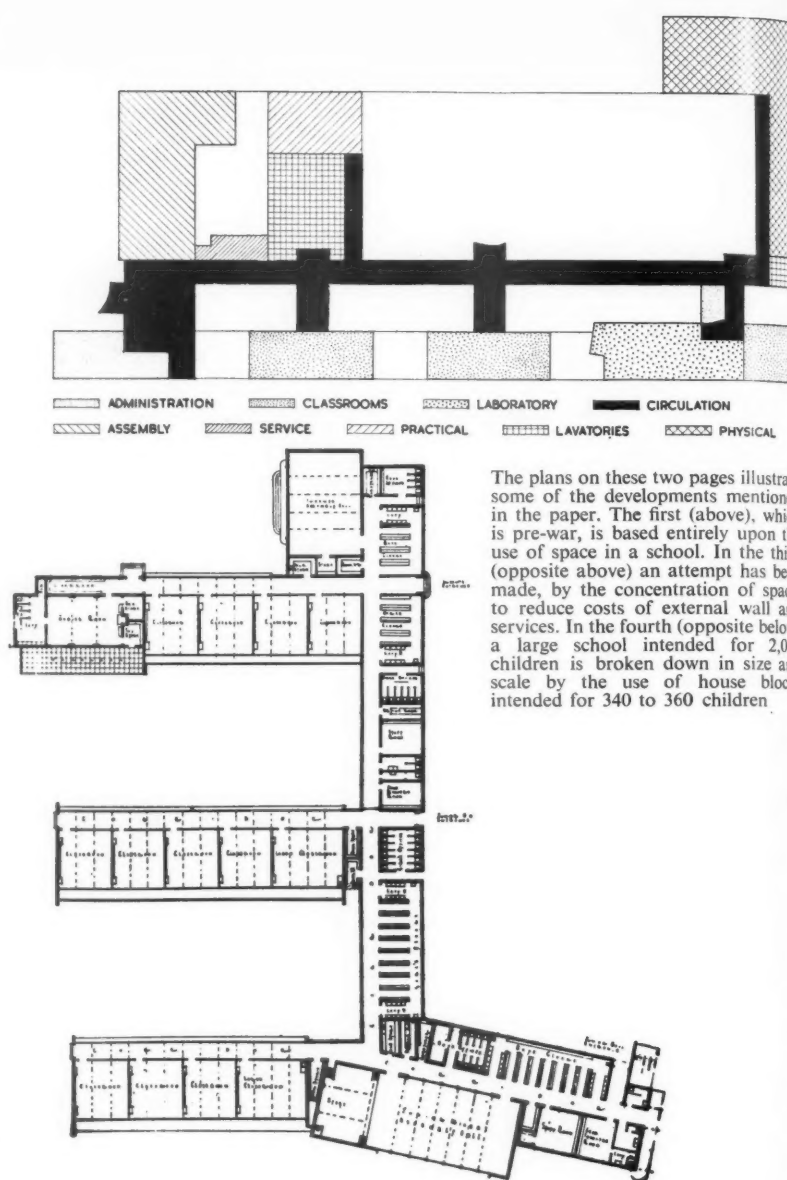
(3) The experience gained in the design and construction of schools in the immediate post-war period. Most authorities are now reaping where they have sown and are beginning to profit by their earlier buildings.

The influence of the Ministry of Education must be mentioned for, by exhortation and example, it has kept people thinking hard. By the publication of its bulletins it disseminates information and experiment in a comparative and coherent form, never achieved by any Ministry controlling building. It is an enormous task and the Ministry has courage and vision.

**School Elements.** I intend to proceed from the particular to the general and to show, visually as far as possible, how the conception of the use of space within the school is changing, and is affecting the design of schools.

(a) *Classroom to Teaching Space.* The most notable development to which almost everything else is correlated is in the conception of the classroom. The immediate post-war idea, shown in the reports I mentioned earlier, is of a room designed for aural instruction only. The blackboard forms the focus of the room, with the teacher's table and cupboards to one side and the desks packed in so as to allow a precise minimum area for access and no more. Because it is intended primarily for blackboard instruction it is well and evenly lit with a combination of side lighting from the main wall windows and clerestory. This conception is slowly disappearing. The classroom is no longer thought of as being only for blackboard teaching but rather for educational activity on the child's part. The blackboard is ceasing to be the focus and the room loses its directional quality.

Other forms of teaching demand different shapes. The lighting, while even, is no longer axial; the room becomes square or L-shaped; its form is only limited by structural considerations. Total enclosure of the space may even be abandoned. All these different forms in themselves shape the plan; clerestory or top lighting rigidly limits the type of plans, while types of classroom which depend on the use of light from two external walls increase the perimeter and again dictate certain plan and structural forms.



The plans on these two pages illustrate some of the developments mentioned in the paper. The first (above), which is pre-war, is based entirely upon the use of space in a school. In the third (opposite above) an attempt has been made, by the concentration of space to reduce costs of external wall and services. In the fourth (opposite below) a large school intended for 2,000 children is broken down in size and scale by the use of house blocks intended for 340 to 360 children.

(b) *Assembly Halls and Large Enclosed Spaces.* A very similar educational attitude is to be found in the evolution of the school hall for the same reasons. Multiplicity and spontaneity of use is leading to informality in the arrangement of space. In earlier halls the auditorium concept is dominant, with a proscenium arch, seating formally arranged and with a form giving good acoustic properties for stage and audience. It is, in fact, a small theatre, intended for assembly, drama and music.

In the later forms, while this type of use must still continue, greater allowance is made for group activities, music and dancing, games and entertainments. The hall is consequently being modified both in shape—the abandonment of the rectangle with

one axis longer than the other, in proportion—and by a reduction in height. Above all, the auditorium concept is being broken down. Where a stage is employed it is regarded rather as giving the possibility of dual use simultaneously on two levels.

This brings about alterations in methods of daylighting. The upper part or stage must be lit and all parts of the hall require good light, preferably at lower levels. Hence the elimination of the formal frame of windows and the substitution of comparatively shallow strip lighting. The same occurs in artificial lighting and here the tendency is towards a larger number of fittings of low intensity.

Moreover the position of the hall in relation to the general organisation of the

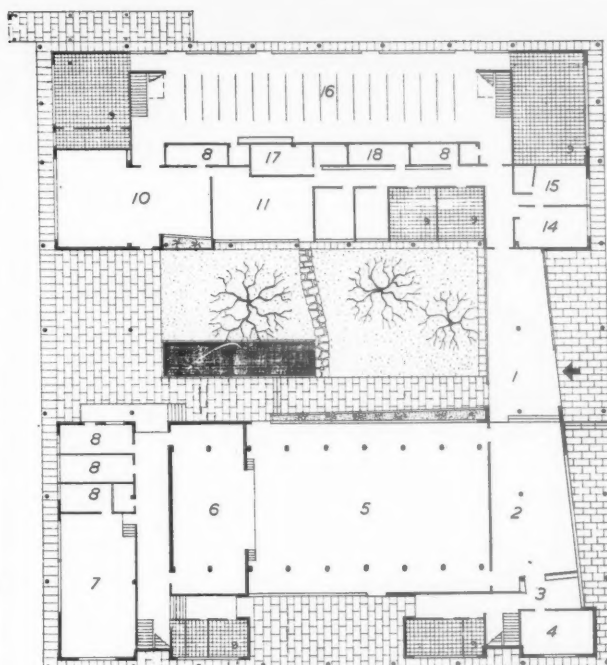
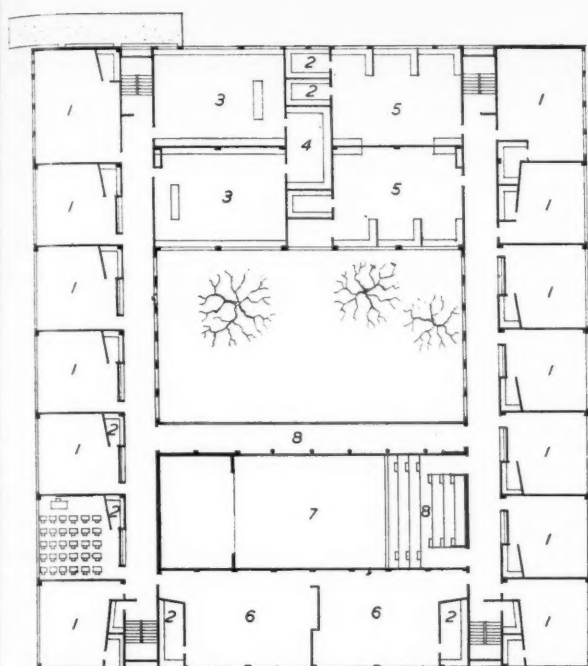
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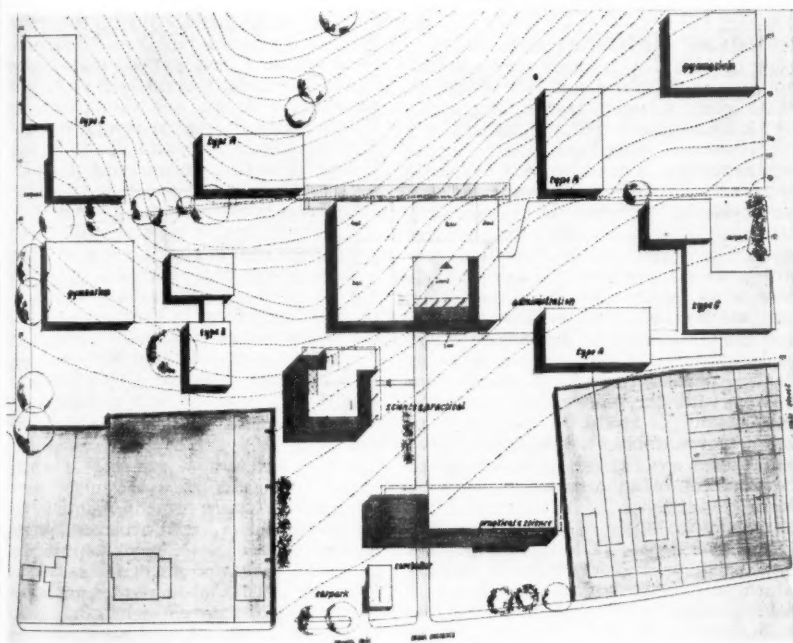
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Key. First floor plan (left): 1, classroom. 2, stores. 3, lab. 4, prep. room. 5, domestic science. 6, art and craft. 7, upper part of hall. 8, gallery. Ground floor plan (right): 1, entrance hall. 2, foyer. 3, waiting. 4, medical inspection. 5, hall. 6, stage. 7, music. 8, stores. 9, lavs. 10, library. 11, staff room. 14, headmaster. 15, secretary. 16, cloaks. 17, ventilation. 18, switch room



school tends to change. When it was regarded as a formal meeting-place it could be isolated in some position of special importance. When it is in constant informal use it must be closely related to the activities of the school. Perhaps we shall yet see the plan of the Middlesex School of 1909 revised.

(c) Dining Spaces. This was a new problem

after the war, since few schools had included a special space for it. First of all it was regarded as another formal enclosure, its size and shape based upon the number of children using it and the position of the serving hatches. Here economic considerations have somewhat altered the perspective and the use of so much space for a limited period only during the day has forced architects to develop it for other purposes.

This again has led to a greater informality of spatial treatment and to less specialisation. It is used to give further space to the hall or as additional rooms for general purposes. Lighting is less important here and most authorities try to give this space a smaller scale and domestic atmosphere.

(d) Circulation and Entrances. There has been a continuous reduction in the amount of what we call circulation space. In the years before the war this sometimes amounted to 35 per cent of the total area, while it was commonly 30 per cent and over even a few years ago. Various attempts have been made to reduce it or to find some other use for so much area. Two methods may be observed: (1) Dual purpose. By using one side as cloak space or by using it for various forms of educational activity such as modelling or practical work. (2) By elimination and the use of teaching spaces for circulation. This is a reasonable proposal as the educational curriculum permits simultaneous movement but cannot be regarded as ideal.

At present it is possible to reduce this area to about 12-18 per cent of the total. These reductions in circulation areas have been, I think, successful. They have reduced



relative costs and have not reduced the efficiency of the school.

Of the two, the use foreshadowed by the Ministry's own school at Wokingham, where some circulation spaces are turned to practical purposes, appears to be the most promising. Also worth commenting upon is the decline of that traditional feature the ceremonial entrance, designed for use by governors and education officers but kept securely locked at all other times. This entrance, which was traditionally placed upon the main axis of the assembly hall so as to permit the easy entry of sacerdotal processions led by the Bishop in his mitre, has almost disappeared. Instead the entrance, which usually has doors of the same scale and type as in the rest of the school, leads directly into either the foyer of the hall or into the general circulation of the school. Its height and importance in formal terms have disappeared.

(e) *Trends.* Summarising the tendencies which have appeared in recent plans, the following features can be observed:—

1. Spaces are less specialised in use and tend to be planned for more general use or for a greater number of uses. Instances of this which I have already noted are assembly halls and general teaching spaces which are used, particularly in junior schools, for both theoretical and practical teaching. In secondary schools too, this division is less sharply accentuated than before.

2. Simplification of specialist rooms. This is not much in evidence but requires serious considerations. Since the war the demands made by specialist subjects upon space—for equipment and storage—have increased and ought to be diminished. If girls are to be taught to cook—evidently necessary since their mothers can't—it is held that every type of cooker should be provided.

3. Reduction in overall areas of schools. Sufficient information has been given by Mr. Marshall on this subject. I would only like to make one comment upon his remarks. The overall area required for educational purposes in relation to the number of children in the school is now all that is defined by the Ministry. This leaves the division of the space to the local educational authority and gives the architect an infinitely greater freedom in planning. With the co-operation of the educationalist it should now be possible for him to experiment in terms of constructional technique with the spatial arrangements and for further advances in school planning.

At the same time we must be alert to see that this overall area is developed for maximum use. The area, measured in terms of space per child, is not large; ingenuity of arrangement which offers a lower area per child is often a specious advantage.

4. I should like also to make a plea for the reduction in size of school units. I do

not think this need necessarily be achieved by smaller schools but by breaking down larger schools, if you like, into smaller self-contained groups. In this connection the house system developed in public schools and being adopted for State ones in comprehensive schools has great possibilities. I would like to see this system, by which theoretical teaching spaces, dining-rooms and so on are grouped in distinct and separate units, extended to all schools of 480 children and over.

5. A great deal of thought is being given to the arrangement and relation of spaces required for specialist teaching. Two approaches to the problem can be distinguished, one laying emphasis on the technical aspects and the other upon the educational. In the first case the aim is to group all the teaching spaces requiring special services into one group which is made as compact as possible. The laboratories or workshops requiring extra gas, water or electricity are grouped and the cost of the provision of such services is reduced. In the second approach technical and economic considerations are not allowed to dictate either the disposition of these spaces in relation to the rest of the school or the form and grouping of these spaces. In this way workshops for metal or wood may or may not be grouped according to the educational pattern.

6. A further and quite consistent development of what may be called the 'technical' approach to school design can be seen in some recent schemes. In these the architect has considered the problem primarily for economic space enclosure. This is an extremely interesting and valuable approach; a school is seen as a building with definite requirements of lighting, services, and of fairly rigid space dimensions. This approach certainly would seem to lead to a high degree of economy since external perimeter walls, floors and roofs, etc., are reduced to a minimum in area and length. It may lead logically to spaces exclusively top lit, or lit by clerestory as in the American example. It may be contrasted with the opposite extreme—the practical rooms at the Ministry of Education's own school at Wokingham where educational requirements have led to the development of a looser arrangement of space.

**Effect upon design.** I have dealt with the principal elements in a school building which go to make up the plan. But as I have already said, a school is not the addition of a number of separate units, however excellent in themselves. A successful school building is one in which all the various spatial elements are related to the educational pattern. It is the whole plan, the whole design; a modification in the use of the classroom or teaching space will eventually lead to changes in the whole design. For the sake of clarity I have grouped these changes under two headings: (1) Changes in planning technique; (2) Changes in formal elements—design.

(1) *Changes in Planning Technique.* The most notable change that has occurred since the war has been a continuous reduction in the overall spread of a school. What Professor Sir W. G. Holford, in another context, has called the plot ratio has sharply diminished. By reducing the extent of the perimeter walling, by the concentration of space within a minimum site cover, cost of building and services can be diminished. Mr. Clarke Hall has shown this dramatically in a diagram he showed recently.

This concentration has come about by the reduction of areas devoted primarily to circulation as well as by the adoption of multi-storey buildings—3 and 4 and higher for secondaries, up to two for primaries. It has been found possible to achieve this concentration by the extended use of clerestory and top lighting and, in the case of higher blocks, by lighting from two sides.

I expect to see these tendencies carried a good deal farther yet. Concentration of space in recent plans has been achieved often without a reduction in the length of perimeter walls. I believe that a further reduction in cost and space may yet be achieved without the sacrifice of any amenity.

(2) *Formal Elements.* I come at last to what we all, as architects, wish to achieve: good design for our buildings. The changes in technique I have noticed must have a considerable effect upon our attitude to design. It is no use our sitting back and thinking that the methods that achieved certain results in the past will also be valid if those methods are abandoned and others substituted. We do not have the same values and qualities at our disposal today and we must exploit different ones. While a very high level of planning and structural technique has been achieved today and was to be seen at the exhibition held at the Building Centre in February this year, the formal design of school buildings has not yet achieved the same high level. We have not yet exploited to the full the opportunities that are implicit because we do not always clearly recognise what these are.

Let me give a few instances of what I mean. If we are to make the fullest use of daylight by means of top lighting and clerestories, in order to achieve a greater concentration of space, we must abandon our traditional concepts of mass. London University, the Cathedral at Canterbury, obtain part of their effect by contrasts of mass; the tower of the university rises above the predominantly horizontal linear pattern of Bloomsbury. The towers of the Cathedral dominate and contrast with the not inconsiderable mass of the nave. This is a result which it is not possible to achieve if the main element in a school building is the glazed clerestory rising above the flat roofs surrounding it. Three dimensional ideas on the composition of mass will not help. We must learn to exploit the value of line—by the delineation of roofs and eaves



and pattern by wall and glazing treatment. In the example I have chosen for illustration the designer has recognised this and emphasised it by colour (page 314, right).

Georgian precedents—the use of string courses in contrasting materials, stone with brick—give us a clue to the solution of this problem.

Another example lies in the elimination of the wall as a supporting element. In practically all school buildings today the roof and floor loads are supported on a frame of some sort and the wall becomes a weather-excluding skin, opaque or translucent as required. It is therefore useless to seek the same effects as were achieved when the interplay of solid and void in wall and window could be organised for proportion and pattern. Again, what can be achieved is use of line, the superimposition of the patterns inherent in glazing units and their expression. The blank window, without scale or interest, will achieve nothing. Architects have achieved much when this is recognised. In this school of Yorke, Rosenberg and Mardall the whole interest of the façade is concentrated on the expression of the opening units.

Another instance also arises out of the wall. The use of large-scale prefabricated

panels usually means a loss of texture, though not necessarily a loss of pattern. No material has yet achieved the range or permanence of texture of brick or stone. But this can now only be obtained in rare cases and we must substitute the use of pattern where slabs are employed or embossed pattern in sheets, or where neither of these exist emphasis in the use of colour. I believe a part of the revival of interest in colour today comes from a realisation of this fact.

I have referred already to what might be called the 'technical' approach to school design. The effect of a rigid and rigorous concentration on such aspects is to eliminate any smaller breaks or changes in the design—say from two to one storey—and to bring such limitations, even at some loss of convenience, into the larger frame of the whole school. Such examples as can yet be found of this approach make for a building of great formal interest. It is impossible not to admire the logical consistency of this approach even though one may doubt if it does not go too far in one direction—in giving a mechanistic expression to educational design.

This is an extremely important aspect—one which is bound to be of vital impor-

tance to us today, forced, as we are, by economic circumstances to increases in costs or reduced areas. It is one I think the Conference should consider.

**Conclusion.** The development of the school building programme since the war makes a very interesting study in architectural evolution in terms of social change. It is true that the scale is small and the perspective short, but I think it will be admitted that a comparatively small social change has already produced architectural consequences of some importance. A new pattern of education (the social change) has had a direct effect upon the use of space in school buildings and this has affected the spatial considerations and the plan; in their turn, changes in plan have been achieved by the exploitation of constructional techniques. The full expression of these technical changes is leading us to rethink our ideas and concepts of design.

School design is probably the most vital and experimental field in architecture today. The empiric approach, engendered by the Ministry, has percolated through to us all and I think the results being obtained will rank with those of any country. I believe in school building we now lead the world.

## How the Local Authority Works

By C. H. Aslin, C.B.E., Vice-President R.I.B.A., County Architect, Hertfordshire

THE TITLE obviously suggests a very prosaic paper, and I would state at once that I do not propose to deal with it by a catalogue of various happenings in the daily life of an official architect. On the other hand, I propose to take the opportunity to deal generally with the subject, and to cover as wide a range as possible, in the hope that discussion may be stimulated.

**The Beginnings of Official Architects.** In recent years the official architect has come to be accepted as a normal part of the profession, but even quite a few years ago he was looked upon as something quite peculiar as compared with his brother, the private practitioner, who was regarded as the normal and established unit. This view, however, was quite erroneous, because through the long line of architects, known and unknown, since the days of Egypt and Greece, through the Roman Empire, the medieval period and the Renaissance, architects have obviously been remunerated for their labours in a variety of ways—in some cases by wealthy patrons, and in others by the State or Church; and their work has been judged by their contemporaries and by posterity on its merits and as works of art, without any regard for the way in which they were paid for doing it.

It is interesting to note that there was a Surveyor or Controller of the King's Works as early as Edward I, and the first official architect in this country who carried out works on a large scale was no less a person

than Inigo Jones, who was Surveyor to the King from 1615 to 1648. From 1705 to 1718 the office of the Surveyor was occupied by Sir Christopher Wren, and among the names of other distinguished architects who held office under the Crown are those of Hawksmoor, Colin Campbell, William Kent, Robert Adam, Sir William Chambers, Sir James Pennethorne and Sir Robert Smirke. Whatever the individual capabilities of the modern official architect may be, he can at least claim the distinction of following a company of very eminent members of the profession.

At the beginning of this century the official architect was looked upon as something new and rather peculiar because we were entering a new phase of development, and the official architect is the product of the changing time which has been so evident in the last fifty years. In the 19th century, so strongly marked by individualism in trade and every other enterprise, he would have been an impossible anachronism. At the present time, in a world of Government control and social service, of municipal enterprise and great industrial combines, the official architect has grown naturally out of this shape of controlled undertakings, so different from the individualistic world of the 19th century.

**Development of Local Authority Work in the Last Fifty Years.** At the beginning of the century there were very few local authorities who employed architects in

their service at a salary. The reason for this was, of course, that the field of operations of a county or borough was very limited, and a very high proportion of building was undertaken by private enterprise, which naturally looked to the practising architect as its adviser. Since the end of the first great war, however, more and more work has become the responsibility of national and local government. This trend started with the municipal housing of 1919, and having set up architectural departments local authorities naturally employed their architects to carry out other work such as municipal offices, markets, baths, bus stations, and indeed every kind of building for all the enterprises for which local authorities became responsible.

This burden of work placed on local authorities reached a peak with the 1944 Education Act. The capital expenditure to satisfy this measure amounts to about £53,000,000 a year, so that with the limitation of expenditure on private enterprise and the large sums being spent by the central government on defence, the local governments throughout the country are now spending a very high proportion of the total expenditure on building. In other words, the whole pattern has changed and completely reversed since 1914, and we shall examine later how this change is likely to affect the whole profession.

**Control of Expenditure.** It is sometimes thought that because the official architect

deals with public money he is likely to be much more extravagant than the private architect dealing with a personal client. This idea, however, is quite erroneous. The capital amount for any project is approved by the local authority which is to spend it, and furthermore the same approval must be forthcoming from the government department which is sponsoring the project and providing some proportion of the cost. The capital cost of the project having been approved by both these authorities, the architect cannot spend any more than this figure without a precise approval. While the work is in progress he is subject to the scrutiny of one of his colleagues, the local government accountant. Final accounts for payment are also vetted in the same way, and in due course the whole of the accounts are scrutinised by the government auditor. In other words the greatest possible precautions are taken to see that public money, whether raised by taxes or local rates, is expended as wisely as possible. This method is governed by a series of Standing Orders, and a considerable part of the official architect's time is taken up by satisfying these rules, which are designed to protect the public which pays.

In recent years there have been many private architects who have learned by experience of this form of financial control; the reason being that public offices have had such a large programme to carry out that it has been necessary to enlist the services of private offices in order to cover the demand. In some cases work has been entrusted to private practitioners just in the same way that it would be handed to them by a private client, but in more cases still the work has been handed out and executed by way of collaboration between the private architect and the official. There appear to be many advantages in this system. In the first place, in order to carry out all the programme, many official offices would have to be increased in strength enormously, and when the work decreased—as it inevitably will some day—we should have the spectacle of assistant architects being dismissed, with consequent distress. The second important consideration is that, with the shortage of normal work for private offices, it is difficult to see how they could possibly keep going without sharing some of the government-sponsored work which is normally carried out by the official architect; and it will undoubtedly be disastrous for the profession, if and when work sponsored by private enterprise is available, if there are insufficient competent private architects to carry it out. This collaboration is therefore not only necessary to do the official work now required, but it is, in my opinion, essential to keep the whole profession on an even keel.

**The Effect on the Profession of Enlarged Public Offices.** At the beginning of this century the pattern of the profession seemed to be rigidly fixed. Most people entered the profession through articles in

a private office; relatively few bothered to take examinations, and the profession was, generally speaking, divided into two parts: first, those who had the good fortune to belong to a family practice, or had parents with enough money to buy a junior partnership; and the others who were architects' assistants and were never qualified except by practice.

The whole pattern is now completely changed. The profession is much larger in numbers; all are qualified of necessity, and owing to the conditions left by the war greater numbers than ever are employed in local government offices, and there is conversely less opportunity of starting a private practice. The post-war conditions have created large offices in which practically every member of the staff is a fully qualified architect, and the set-up is quite a different one from that which obtained when staff generally were unqualified and content to act as assistants to the head or heads of the firm.

This therefore, in my opinion, suggests an entirely different pattern of working. The old method of designing at the top and passing the work down the office, so that drawings may be done at the direction of the Chief, does not produce the best results. This is due to the fact that the qualified architect is not fully used to the capacity of which he is capable. The pattern to seek, therefore, is one in which the assistant architect is given charge of the project from the sketch plan stage. It might be said that this method is bound to produce a varied quality of work from the office, because naturally the skill of each individual member is a varying factor. On the other hand the friendly rivalry which this method creates stimulates the individuals, and causes the general standard of the work in the office to be much improved; such standard being inevitably much higher than that which can be produced by the pyramidal office.

The group system is one which, in my opinion, produces the best results, and is worked in the following manner. Let us assume that we have a group of architects of a size necessary to carry out a particular programme. One member of the group will assume responsibility for the design of the first project, and the other members will act as assistants. The second member of the group will take on the next project, and all the other members, including the first, will assist him in the same way. This pattern is repeated until all the members of the group have a project for which they are responsible, so that each architect in turn is responsible for a scheme with the assistance of all the others, and alternatively becomes an assistant himself to the other members of the team.

This method, of course, means that each member of the staff gets an opportunity of acting in his proper capacity as a fully qualified architect, and consequently he both deserves, and is justified in expecting, higher pay than would formerly have been given to an assistant doing hack work. The

size of the group in which this method can be successful should not be greater than 10 members, and another necessity for ease of working is that the jobs should be relatively small, say about £50,000 each, of similar character; it will also be clear that they must be continuous.

Precisely the same method is a little more difficult to work with larger projects, such as secondary schools, which will average somewhere between £150,000 and £200,000 each, but on the other hand this method can be made to work with varied projects—that is, varied both in type and size; and much better results can be obtained by giving the qualified architect, of whatever age and experience, the opportunity to exercise to the full the profession for which he has been trained.

This matter is one of the greatest importance to the profession, because it would obviously be wasteful to train fully qualified architects and then never to use them for the work which they are capable of performing.

This also raises the question of remuneration, and it appears to be quite clear that the group leader should be paid at a rate more in conformity with his ability and responsibility than was thought to be proper in the past, when he acted as a hack worker to the Chief.

This problem is, of course, also tied up to the actual cost of the architect's services, as there is obviously a limit to what can be paid without the cost of the service to the client, *viz.* the local authority, being higher than a reasonable charge based on the R.I.B.A. scales. This brings me to another point, which has proved to be a contentious one amongst local authority architects, and that is the necessity of keeping cost records; and it cannot be too strongly stressed that cost in local government means precisely the same as it does in a private office. In other words, everything is charged against the office—and everything means salaries, rent, lighting, heating, materials, telephones, transport, and a charge from the clerk and the accountant for the services such departments render to the architect. Costing is essential for two reasons. From the employing authority's point of view it is necessary to show that the office is being run with reasonable economy, and from the chief architect's angle a simple costing system is capable of locating various groups in the office which are doing less well than others; and steps can, therefore, be taken to put the matter right. Otherwise, in a large office, it is possible to have groups working uneconomically, and this deficiency might go on for years without being located.

The whole subject of official architecture needs very careful consideration, because it is at this moment providing, and will continue to provide, a very high proportion of architectural work, and it is essential in the interests of architecture and the profession as a whole that it should be of the best possible quality.

# Collaboration Between Official and Private Architects

By Sidney H. Loweth, F.S.A. [F], County Architect, Kent

MY ATTENTION was first directed to the post-war building problems when, during the war, I was invited by the Ministry of Information to write an article on that subject for publication in the U.S.A., which was followed afterwards by a request for a series of similar articles for a journal in this country.

In considering these problems, a survey was made of all the then known factors, helped in no small measure by a knowledge of what happened after the 1914-1918 war and of the crises between the wars when building programmes were suddenly developed and as quickly cut.

From these surveys, the following points emerged:—

- (a) That as no schools, dwelling-houses and commercial buildings (other than those required in connection with the war) had been erected since 1940, and the reinstatement of war damage would have to be tackled, the Government would be compelled to embark upon the biggest building programme in the history of the country.
- (b) That this programme would begin immediately after the cessation of hostilities in order to provide work for those returning from the Services and expand rapidly in the immediate post-war years.
- (c) That for some years there would be a shortage of staff in the architectural and allied professions to deal with this work because: (i) Many of those in the Forces were serving in technical units and would, therefore, be amongst the last to be released; (ii) Only a limited number of persons would have qualified for these professions during the war.
- (d) That this shortage of staff would mean the development of competition for their services between employers, resulting in staff continually leaving one job for another, an inflationary increase in salaries, difficulties in office organisation and consequent delay in carrying out the programme.
- (e) That in the employment of staff, the housing factor would play a very important part.
- (f) That many materials required for building, particularly timber and steel, would be scarce and this would force the Government to exercise some form of control and rationing.

In the light of these considerations, a local authority such as Kent had to decide whether to expand its Buildings Department or to employ firms of private architects to carry out some of the work. Bearing in mind that in the years 1931-32 the County Council had successfully employed a panel of twelve firms of private

architects to deal with a large building programme, they did not hesitate to adopt the same course in 1945. The permanent staff, therefore, remained at approximately its pre-war establishment and firms of private architects, consulting engineers and quantity surveyors working in collaboration with me were employed to deal with any work which the permanent staff could not absorb.

The main advantages of this arrangement are:—

- (1) It is possible to increase instantly the output of work by employing as many private firms as may be required so that no delay occurs, a particularly important point having regard to the post-war practice of Government Departments of awarding a starting date for each project.
- (2) It produces a greater variety of solutions of similar problems and therefore buildings of greater interest.
- (3) It saves time and expense in advertising for and obtaining additional permanent or temporary staff.
- (4) It saves the cost of providing additional office accommodation, furniture and equipment.
- (5) It would avoid a reduction of permanent staff by the authority should there be serious cuts in the building programme, but only at the expense of the private architects. The extent to which they would then be employed would depend upon the severity of the cut in the building programme.
- (6) It would take advantage of the 'bonus' or profit-sharing system under which many private architects run their offices, thus shortening the period for the production of drawings.

When the policy of employing private architects instead of the inflation of official staffs was advocated to a body of official architects, it met with strong criticism by some, in spite of the fact that the then President of the R.I.B.A., Sir Lancelot Keay (himself an official architect) had strongly supported it. It soon became apparent, however, that many of these critics had not fully appreciated the magnitude of the task before them and the difficulties with which they were confronted owing to post-war conditions. Later, many of those who criticised came to realise that supplementing the work of the permanent staff by the employment of architects in private practice was the best solution to the problems of: (a) carrying out a large programme in the limited time available; (b) surmounting the difficulty of securing technical staff with the qualifications and experience required, and (c) preventing the

salaries of the whole of the permanent staff becoming unduly inflated, and these former critics advised their own authorities to adopt the same policy.

That this policy has been successful in Kent is shown by the fact that the Council has been completing on an average one new school every three and a half weeks for the last four years. It is believed to be the first authority to sign up its hundredth new school contract since the war. In addition to this, many other new buildings and alterations and additions to existing buildings, reinstatement of war damage, etc., have been carried out. By employing private architects (in association with its own surveying and architectural staff) the County Architect's Department was able to prepare, within a comparatively short space of time, a complete record—of plans, sites and technical reports—of every school in the county (nearly 900 in all), a work for which it was commended by the Ministry of Education. If the work had had to be done entirely by the Department's own depleted staff it would have taken much longer.

The success of this policy has only been achieved with the whole-hearted co-operation of the private architects and close collaboration with them, both on the administrative and technical sides. The organisation and method of establishing such collaboration is as follows:—

## ADMINISTRATIVE

**Co-ordinating Officers.** To correlate the work of private architects to ensure that they are all working to similar standards, senior officers of the County Architect's Department have been appointed as co-ordinating officers under the following heads:—

- (1) Architectural: (a) schools, (b) other county buildings.
  - (2) Sites.
  - (3) Engineering.
  - (4) Administrative.
- These senior officers also co-ordinate the work of the private architects with that undertaken by firms of consulting engineers and quantity surveyors employed by the Council. There is, in fact, a complete organisation to deal expeditiously with all 'outside helpers' and any mistakes or omissions which may be made with any one firm are speedily corrected with all the rest.

**Duties of Private Architects.** The private architects are not required to undertake the whole of the duties normally performed by private architects. Table A shows, in summarised form, the work the private architects have generally to undertake vis-à-vis the R.I.B.A.

Private architects are not required to attend at either Council or Committee

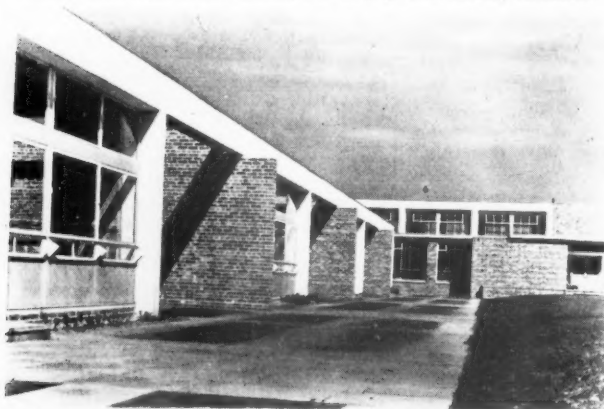




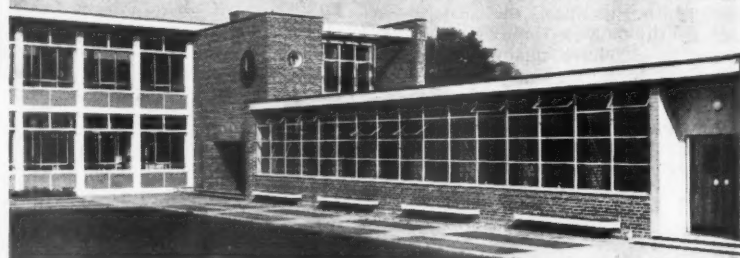
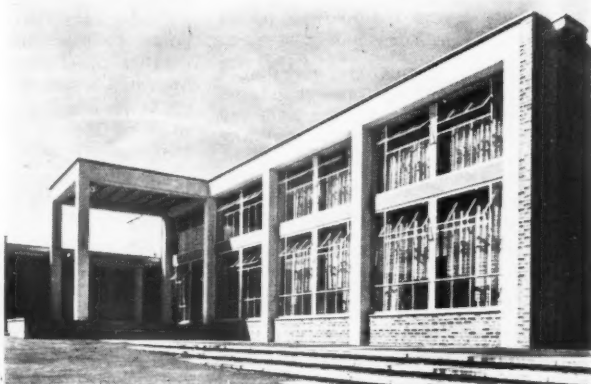
Sevenoaks Hattons Secondary School for Girls. Cable and Pite [F/A] in collaboration with S. H. Loweth, F.S.A. [F], Kent County Architect



Chislehurst and Sidcup Redhill Road County Primary School. S. H. Loweth, F.S.A. [F], Kent County Architect



Orpington Crofton Primary School. Lyons, Israel and Ellis [AA] in collaboration with S. H. Loweth, F.S.A. [F], Kent County Architect



Northfleet Secondary School for Girls. Lyons and Israel [AA] with S. H. Loweth, F.S.A. [F], Kent County Architect



Above and right: Folkestone Technical College. S. H. Loweth, F.S.A. [F], County Architect, Kent County Council



meetings. These are attended by either the County Architect, his deputy and/or his senior assistants who are answerable for the scheme. Private architects are, however, requested on occasions to attend staff meetings when representatives of other Departments are present.

**Guidance of Private Architects.** The very greatest care is taken at the start in the briefing of the private architect, as it is felt that by so doing a good deal of time and effort is saved. To this end, the private architect is furnished with typed lists of all the accommodation required (at all stages of the job) and only on rare occasions are these conditions altered during the progress of the job. A record of work either abandoned or deferred, including cost, is kept for reference by the Chairman of the County Buildings Committee.

The County Architect has issued very full notes for the guidance of private architects, of which details are given under various headings later in this article. Apart from these notes, information circulars are issued periodically to private architects giving particulars of Government Departmental memoranda on materials for various purposes, substitutes and lists of recommended proprietary materials of various kinds, together with names and addresses of manufacturers. Useful notes are added on authorisations for steel and timber and on a great variety of points relating to construction, finishings, equipment and so on.

A section of the County Architect's Department keeps an up-to-date map of brickfields and their stocks. Sample brick walls have been erected at the head office at Maidstone for the benefit of the private architects who may not be familiar with the local varieties and sources of supply. A record is also kept of new materials, specimens of which are on view in the 'sample room'.

**Estimate of Cost of Works.** The estimated cost of the project for which the private architect is employed is prepared by him, with the exception of the estimates in respect of electrical installation (including cable), heating and hot and cold water services, and structural work, which he obtains from the consulting engineers. Such estimate is then forwarded to the County Architect, who computes the incidental expenses, comprising the fees of the private architect, consulting engineers and quantity surveyor, the salary of the clerk of works, the cost of printing bills of quantities and adds such expenses to the figure submitted by the private architect and then informs him of the total cost of the works.

**Quotations from Specialist Firms.** The private architect is required to prepare the technical portion of specifications for specialist works, materials or goods for which prime costs or provisional sums will be inserted in the bills of quantities. He is supplied with copies of the Council's Standard Forms of Tender and General Conditions and Preliminaries applicable to

(a) specialist sub-contractors and (b) specialist suppliers. Competitive quotations are obtained by the private architect from not less than three specialist firms, selected when possible from the Council's approved list of specialist sub-contractors, a copy of which is supplied to the private architect. He examines the quotations obtained and submits them to the County Architect with a report thereon. The County Architect then gives approval or otherwise to the inclusion of a prime cost or provisional sum in the bills of quantities based upon the amount of the quotation recommended.

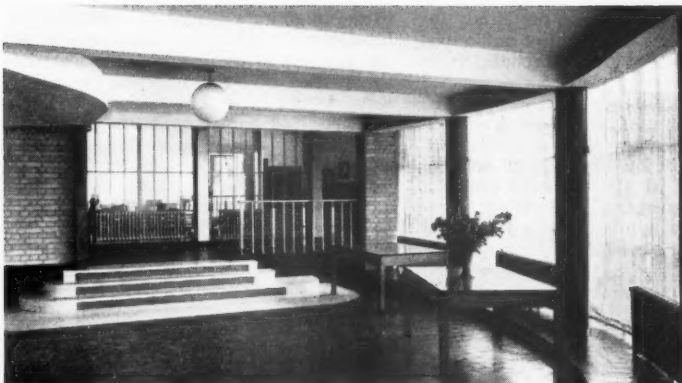
**Specification (Building Works).** The private architect is required to prepare and furnish

to the quantity surveyor an outline specification giving sufficient particulars of the construction of the building, the materials to be used and the schedules of doors, windows and general finishings to enable a full specification to be prepared by the quantity surveyor. The quantity surveyor submits the draft specification to the private architect for his approval or amendment as the case may be.

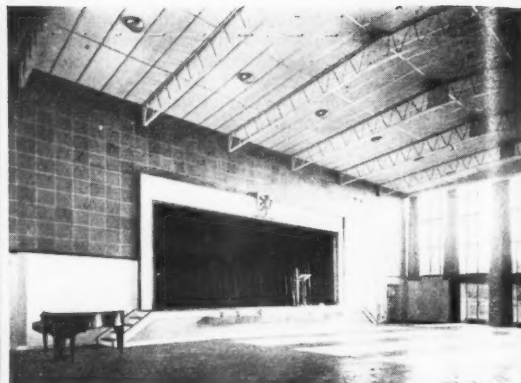
**Consulting Engineers.** The Kent County Council have entered into contracts with consulting engineers in connection with heating, ventilating, domestic, mechanical, electrical and structural engineering works, thus forming a panel of consultants. A

TABLE A

Work as Required by Clause 2(a) of the R.I.B.A. Scale	Work as Required by the Kent County Council
1. Taking the client's instructions.	No—dealt with by the County Architect.
2. Preparing site and levels plan, etc.	No—Generally prepared by Buildings Department.
3. Preparing sketch design.	Prepared either by the private architect or the Buildings Department.
4. Making approximate estimate of cost by cubic measurement or otherwise.	
5. Preparing drawings and specifications for the purpose of obtaining tenders.	(a) Preparing working drawings. (b) The specification for the building works is prepared by the quantity surveyor, but to enable him to do so, the private architect is required to furnish him with brief notes regarding the construction of the building and the materials to be used, together with schedules of doors, windows and general finishings. (c) Preparing the technical portion of specifications in connection with prime cost items and provisional sums.
6. Advising on tenders and preparation of contract.	No. Dealt with by County Architect.
7. Selecting and instructing consultants (if any).	No. Dealt with by County Architect.
8. Furnishing to the contractor two copies of the contract drawings and specification and such further details as are necessary for the proper carrying out of the works.	Yes, but it should be noted that the specification does not form part of the contract.
9. General supervision.	Yes.
10. Issuing certificates for payments.	No. Certificates are issued by the County Architect on the recommendation of the quantity surveyor.
11. Passing and certifying accounts.	No. The variation account is prepared by the quantity surveyor and it is certified by the County Architect.



Northfleet Secondary School for Girls. Lyons and Israel [A4] and S. H. Loweth, F.S.A. [F]. The entrance hall



Oldborough Manor, Maidstone, County Secondary School. Cecil Burns and Guthrie [F/A] and S. H. Loweth, F.S.A. [F]. The assembly hall

copy of the letter of appointment which the County Architect sends to the consulting engineer (for each job for which he is employed) is sent to the private architect at an early stage, so that he knows who the consulting engineer is and what he has been instructed to do.

Under the terms of his contract with the Council, the consulting engineer is responsible for the design, supervision and proper execution of the engineering works for which he is employed. The private architect is required to supply to the consulting engineer such drawings and information as he may require to enable him to advise the Council in relation to engineering works. There must, therefore, be proper collaboration between the private architect and the consulting engineer on technical matters affecting the work for which they are each responsible. There should be an interchange between the County Architect and the private architect of copies of any communications which they respectively send to the consulting engineer.

**Quantity Surveyors.** The Kent County Council entered into contracts with and formed a panel of quantity surveyors. A copy of a letter which the County Architect sends to the quantity surveyor instructing him to take out and prepare bills of quantities and to prepare the specification is sent to the private architect at an early stage of the job.

A copy of the following documents which have to be supplied to the quantity surveyor in respect of each job is sent to the private architect for completion or amendment, as may be appropriate in relation to the works to be executed:—

- (i) Form and Conditions of Tender and form and Conditions of Contract.
- (ii) Standard General Conditions and Preliminaries to be inserted in Bill No. 1 of the quantities.
- (iii) Standard clauses to be inserted in the general summary of the bills.

The letter of instruction sent to the quantity surveyor informs him that he will be furnished with the following documents by the private architect: (a) work-

ing drawings; (b) an outline specification; (c) a copy of each of the quotations in respect of which prime cost or provisional sums are to be inserted in the bills, together with a copy of the specification and drawings (if any) upon which such quotations were based.

**Building Contracts.** The building contract is entered into by the County Council and for this purpose the private architect supplies to the County Architect two sets of eighth scale working drawings, including the site plan. As soon as, in the opinion of the private architect, the whole of the works are completed or any part or section of the works is both completed and taken into use, he notifies the County Architect of the date thereof. The County Architect then issues a certificate of completion or partial completion to the contractor.

**Variations of the Building Contract.** The private architect has no authority to issue variation orders. He informs the County Architect of any variation to the works which in his opinion are necessary or desirable and then submits particulars on a draft variation order. The estimated cost of such variations is shown on the draft order. If the County Architect approves such variations he issues a variation order to the contractor. Particular importance is attached to these orders and to make sure that all concerned receive a copy the orders are printed in booklet form (five sheets) for the contractor, quantity surveyor or consulting engineer, private architect, head of architectural section and office file copy. The office copy shows the financial position. Only variation orders on these forms are acknowledged and paid for and they must appear in the variation account in numerical order. Complete financial control is thus obtained over every job.

**Clerks of Works.** A copy of the letter written by the County Architect appointing the clerk of works, together with a copy of the instructions issued to him with such letter, is sent to the private architect. The clerk of works is under the control of the

County Architect but works in collaboration with the private architect. At the end of each week the clerk of works submits a report in standard form to the private architect, who takes such action thereon as may be appropriate and forwards the report to the County Architect.

## TECHNICAL

**Documents to be Furnished with Instructions to Private Architects to Prepare Schemes.** When he is given instructions to prepare the scheme the private architect is furnished with the following information when applicable:—

- (a) An extract from the ordnance survey showing the site, together with levels, services, etc., with an indication of the suggested siting of the buildings.
- (b) A detailed schedule of the accommodation required (at all stages).
- (c) A chart showing 'target' dates to be aimed at.
- (d) A schedule of cooking equipment, etc., which will be installed.

**Trial Holes.** When necessary, arrangements are made by the private architect with the County Architect for a builder to dig and protect with fencing the number of trial holes which the private architect considers to be necessary. Private architects are required to submit to the County Architect a technical report and dimension diagram on the nature of the soil and subsoil and the levels of water (if any) disclosed by the trial holes.

**Stages of Preparation of Schemes.** The first stage is the preparation of single line sketch plans to 1/500th or 1/16 in. scales as a basis for discussion with the head of the Department concerned. A very brief report is required describing the planning of the building in relation to site or other problems, with an indication of the type of construction to be adopted, to be submitted with the plans. This is accompanied by the usual statement in regard to floor areas, cost per place and forecast of the cost of the whole scheme. On receiving

formal approval to sketch plans, working drawings are proceeded with.

While working drawings are in hand, every opportunity is taken for full consultation with the Fire Officers in relation to fire precautions necessary and also with officers of the Education Committee in regard to layouts of fittings, etc., in specialist rooms.

**Planning and Construction of Schools.** The private architects are naturally advised to consult the Ministry regulations and Bulletins prescribing standards for school premises. In addition to this, full notes on planning of schools (commonly known as 'the blue book' or 'the bible') have been prepared in an endeavour to convey to the architect and engineers general principles and standards required by the Education Committee.

The type of construction is left to the private architects, but they are urged to bear in mind the essential needs of economy, both in the use of materials, finishings and amount of steel.

The overall essential, as we all know, is economy in planning.

**Visits.** Private architects are encouraged to visit each other's projects and, needless to

say, I am only too ready to arrange for visits to projects carried out by my Department.

**Staff Conferences.** Staff conferences are held periodically with all principal officers in the Department and any information arising out of these conferences, particularly in regard to maintenance, suitability or otherwise of materials used, are passed on to private architects for information.

In conclusion, Mr. Chairman, may I quote an extract from a letter of Sir Lancelot Keay, himself a most distinguished official architect, written and published in *THE BUILDER* of 27 February 1948, when Sir Lancelot was President of the R.I.B.A.:—

... the policy ... of employing private architects is that advocated by the Council of the Royal Institute, as set out in the memorandum entitled "The Employment of the Architect on Public Work" and published in the R.I.B.A. JOURNAL in September, 1945 ... which memorandum was drawn up by a small committee under the chairmanship of Sir Percy Thomas, on which were represented equally architects in private

practice and architects holding official appointments.

... if this practice of using the services of private architects is more widely followed, I am convinced that both architecture and architects will benefit.'

Those words of wisdom, Mr. Chairman, were uttered in the very early days of the great post-war building programme and I feel sure that if Sir Lancelot's advice had been more widely followed, a great amount of hutment and 'mass-produced jelly-mould' architecture would have been obviated. Considerable advantage would thus have been gained by tapping the greatest pool of talent and experience, and much more of the country's education building programme would have been completed when building costs were at a far lower level than they are today, thus achieving a substantial saving to the already hard-pressed taxpayer.

Even now, I still receive enquiries from official architects and authorities who are beginning to appreciate the many advantages of employing private architects and I hope, therefore, that these papers and the ensuing discussions will have the effect of encouraging more local authorities to adopt this policy.

## The Private Architect's Problem

By F. R. S. Yorke [F]

WHEN I WAS FIRST TOLD my talk would be about the private architect's problem, I assumed that it would be entirely to do with schools, and that made it very difficult to think up enough problems to make a paper. But in subsequent discussion with the other speakers it became clear that the subject could be extended to cover the private architect's problem generally, and this I take it means his struggle for existence. Here it is easier to see what the problems are. So I propose to deal separately with schools, and to deal with them first.

In order to get the problems into the open, we can take a typical school and follow it through all its stages from the time of briefing. In this way other people's problems may come to light in the discussion.

Generally, the private architect has to work for a number of different authorities, all of whom have slightly varying requirements and several methods of approach to their own problem of dealing with the private architect. For instance, we may find in one authority a section of the architect's department whose sole job is to deal with outside architects, whilst in another we are briefed by the education officer and have scarcely any contact with the architect, and in a third there is no organisation at all. This is not a very serious thing, although when one works a second time for the same authority, knowing the drill, it is noticeable that the whole procedure is simplified and speeded up.

Because he works for several authorities, the private architect is unable to develop a single school type for repetition. But because Ministry requirements have been changing so rapidly and costs have had to come down so often, the disadvantage is less than it at first appears, for it is only a very exceptional system that can have stood the strain of these demands. On the other hand, in working for a number of clients a private architect is kept on his toes; he is kept alert and is in some sort of contact with developments that are going on all over the place.

Working for a public authority is on the whole rather less arduous than working for a private client; this is noticeable from the first briefing. Taking the school again as an example, there is a great advantage in that the local authority's representative who deals with the briefing knows what the requirements are, and there is little going back on the original programme (excepting that different authorities have different ideas on how to calculate the number of w.c.s.). He is not a layman in the same sense as the private client, who has no building tradition and needs a lot of help in clarifying his ideas. And of course he is not spending his own money, which all makes a difference. At the time of briefing the permitted expenditure for a given school is known and from this the number of square feet that can be allowed per child can easily be calculated.

Now we come to the first real problem from the point of view of the Ministry. The

architect is briefed as soon as the education authority has been informed that a particular school is in a particular year's programme; and this may be the case for the official architect, but quite often the private architect is not briefed until some time later, when the panic has set in. This may mean that unless sketch designs are approved at the first submission, the time left between commencement of working drawings and official starting date is too short for drawings to be completed before the quantity surveyor gets them, and so there may be variation orders throughout the whole course of the job.

It normally takes a year from the time of briefing to the commencement of work on the site, or more in the case of a technical college, where much more detail has to be approved by the H.M.I. and the heads of departments. From the time that the programme is known, and on the assumption that the site has been surveyed and there are no complications with services, it will take approximately six weeks before preliminary sketch designs are ready for approval by the architect or education officer, and a further four weeks for presentation to the education committee. Part of this time is really wasted because it is impossible to arrange a meeting to coincide with the completion of the drawings. During this time there are informal discussions with the Ministry and with the client. A little more time may be taken if a particular authority finds it difficult to accept new ideas in planning that follow



from the need to economise in circulation space. It is quite possible that a kind of planning that is becoming common in one area and is approved by the Ministry may appear as wildly retrogressive in another.

One of the factors over which the architect has no control is the timing of arrival of new jobs in the office, and the date on which a start can be made on working drawings.

For a school costing around £200,000, five or six assistant architects with additional junior help will be required at the working drawings stage, and one of the most difficult problems is to maintain a staff that is capable of taking the impact without becoming disorganised. It is particularly difficult when one realises that staff must be kept productively employed for the whole of the year, and that if one is to maintain a high standard of work there can be no question of taking on people for a particular job and dismissing them when the rush is over. The situation is eased, of course, if the office concerned has some large work of a long-term kind, but the problem is a serious one and worth discussing as there may be some solution to it.

The senior assistant on a job of this size will stay with it for two or three years, and will see it through to completion, but as soon as the working drawings are finished four or five people will have completed their part of the work and will be free, and if several jobs happen to arrive at the same stage at the same time—and this is sometimes unavoidable—there may be as many as fifteen people looking for a job at working drawing stage. A little foresight will usually avert the full seriousness of such a situation, but all the same it is a problem; it may not arise with a more highly organised system of group working, but as far as I can see a large office with any kind of team or group work must depend on a steady flow of new jobs into the office.

Another problem is that of paying salaries high enough to relate to the high cost of living. Although building costs have risen roughly three times, salaries have risen to barely twice what they were before the war. This may be due partly to high taxation, which forces a principal to take out more than he might otherwise do in order to create a little reserve, about which I will say more later on. But I think it is also because the materials with which we build now are relatively cheaper than those we used formerly, but at the same time they need much more thought and careful detailing, and an enormous amount of office work goes into the keeping down of building costs. It is not unusual to re-detail extensively in alternative construction, to escape a rise in price or to avoid a scarce material. So it seems that without an increase in the scale percentage the architect will be relatively poorly paid, and if the assistant in the private office is underpaid this will reflect in the salaries of assistants of official architects.

In the last few years we have had to face the problem of increasing costs of building in the interval between completion of

sketch plans and original estimate, and the date of receiving tenders. Table B here gives a clear picture of what could happen at such a time, and when the Ministry insists that the starting price shall not exceed the estimate, in spite of the rising costs, there can be an enormous amount of work in re-designing to cut the lowest tender price by 10 per cent. Once the work is under way prices continue to rise, but the client naturally likes to pay no more than is in the bill of quantities. Some authorities allow a rise provided it is due to increased costs and is reported and explained, others will allow no rise, and others again take it from contingencies. In any case there is continual work throughout the progress of the job in checking prices and comparing them with prices at the date of tender, and so one goes on substituting and re-detailing.

By the time that the contract is signed and building has commenced there should be no extraordinary problems that are especially to do with schools. There is the difficulty that arises with all work for public authorities who have their own form of contract. A private architect normally uses the R.I.B.A. form, and his way of job administration is related to it, so a strange form of contract upsets his normal routine, his standard forms for such things as invited tenders, variation orders, etc., may be unusable and he may even make errors in changing from one system to another. For instance, where the form of contract does not allow the release of retention money to a sub-contractor before completion of the main contract, the architect may omit to state this when inviting prices for a sub-contract, and use his normal R.I.B.A. form; and so become involved in long arguments between main and sub-contractor, and possibly delay work at the site.

All this means simply that whilst the aim is to see that everyone is employed productively we have been forced, since the war, into a lot of unproductive work.

And this takes me on to the second half of my paper.

The first point I would like to consider, and it is a very significant one, is that while

there have been very great changes, and in some ways advances in architectural design and technique during the past fifty years, there seems to have been little change in the machinery for the control and administration of the private architect's office. It is probably true to say that the kind of partnership arrangement entered into by architects today is just the same as that used fifty years ago, and the more one thinks about it, the stranger it seems that little thought is given to this aspect of things. Perhaps the reason for this is that architects have an interesting job and are so fundamentally absorbed in their work itself that they get irritated or bored when they have to apply their minds to such mundane things as administration of the office.

I am, of course, assuming in the remarks that follow that there is and will continue to be room for and indeed need of the private architectural firm, working alongside the large public architectural offices that have grown so considerably in the last twenty-five years. I think that both sides of the profession are necessary, if only that the one may be perpetually keeping the other on its toes.

Whilst there is no point in change for its own sake, I do believe there is a need for a fresh approach to this side of the architect's problem, and it should at least be explored for the following reasons:

First, I think everyone will agree that it is much more difficult for a young man to start in practice today than it was fifty years ago. Clients are difficult to find and if he is lucky enough to be given a sizeable job, the necessary capital to equip his office and run it may be even more difficult, and when the job is complete it is still more difficult to find the next one.

Second, it is much more difficult for the small firm to maintain continuity today than it used to be in the past; and it is not possible, because of the high level of taxation, to put enough money away to create a reserve for slack times.

Third, it is almost impossible for the private architect to save sufficient money to allow him to retire from his practice at a reasonable age and hand it on to a younger and more energetic man.

TABLE B showing School Job Saga:

		Prices (Jan. 1949 = 100)
Briefed .. .. .	May 1950	101.29
Provisional sketch design submitted .. ..	30 June 1950	—
$\frac{1}{8}$ in. plans with estimate on SB. 22 .. ..	11 Jan. 1951	106.47
Working drawings begun .. .. .	5 April 1951	—
Sketch designs finally approved but with minor reservations .. .. .	4 May 1951	—
$\frac{1}{8}$ in. plans resubmitted .. .. .	11 July 1951	119.90
Final estimate on SB. 16 sent in with completed working drawings .. .. .	25 Sept. 1951	121.41
Out to tender .. .. .	End of Dec. 1951	121.70
Tenders received .. .. .	14 Feb. 1952	127.97
Savings demanded .. .. .	—	—
Savings made and SB. 16 resubmitted .. ..	11 June 1952	—
Official starting date .. .. .	25 Aug. 1952	125.00

These factors all add up to increasing difficulties for the beginner and for the small or medium-sized firm. It appears that the bigger firms are to a certain extent better off. It seems they are better able to achieve a continuity of work. Because of their size they cover a large variety of work and get well known in many fields and they may become firmly established. This leads to the modern kind of multiple client, whether public authority or industrial concern, to place its work with such established firms.

The old personal kind of client did not feel he was taking a risk with a comparatively unknown architect if through his personal knowledge he felt confidence in the man. The public authority or industrial concern has not the same feelings as a personal client. The appointment of architects and other professional men must go before a board of councillors or directors, and boards are traditionally cautious and always tend to place work with firms with big reputations. For these reasons I believe there is a growing tendency for the big jobs to go to the big firms. Strenuous objection may be taken to the trend, but if it is inevitable the fact should be faced and the young man starting up today will adjust his ideas accordingly. It may be that he should consider it more advantageous to look upon the principals of the large firms as his clients rather than struggle on trying to find clients of his own. In an enlightened office he may even find more understanding for his ideas than he will get from the type of client he is likely to land.

One of the most interesting developments in the modern office is the increasing freedom of the employed or assistant architect, and there is a problem in delegating more and more work whilst keeping the principal's responsibility to the client.

All this does not mean that the small firm will die out. I think there will always be a need for it. But I do believe that the bigger firms will tend to increase at the expense of the smaller ones, and if this is correct then it emphasises even more my point about the need to investigate the legal foundations on which such firms are based.

They may be full partnerships, but they often take the form of an association which is in fact only a looser form of partnership; or they may be group practices with a number of associates practising anonymously; and there are various other systems. But there is one form of association which may have great advantages, although it is frowned upon by the R.I.B.A. and prohibited by the Architect's Registration Council, and that is the company structure; and I think that we ought to give some consideration to it.

The great feature of a company is that it is an impersonal structure and consequently can be a continuing entity and need not die or peter out at the death of the principal, as a partnership may well do. This is not to say that the individuals within the structure of a company may not themselves be strong personalities: one can think of many men in industry who act in

much the same way as the professional men in the achievement of their objectives and ideals. Can we not imagine the existence of the company which by reason of the skill and personality of its directors and by the care and energy they display in providing worthy succession will enjoy as strong a hold on the esteem of clients as the best professional practice does, and at the same time provide advantages not now open to the professional man?

It may, for instance, be worth consideration, whether the company form might provide a better way in which architects could free themselves to some extent from administrative routine so that they could get back to their proper job of designing good buildings. It is true that in a partnership one could have someone—let us call him the office manager—who would attend to administrative detail; but he would not be a partner, and questions of status might arise if he had to deal with certain problems—as for instance material supplies. In the company form one can see the possibility of a director who would not need to be an architect but who could bring his special administrative skill to the assistance of the group as a whole.

Then is there not a possibility that the company form might hold some tax advantages? Although the Inland Revenue authorities have powers to charge surtax on certain companies which may distribute much less than their total profits, it is nevertheless true that many companies which come within the scope of this legislation are able to build up reserves out of profits after income tax and profits tax, whereas the private practitioner or the firm can only set aside what is left after income tax and surtax have been paid. It is possible, therefore, that the company form might not only provide a continuing entity but something which, by reason of the fact that it can set aside some reserve, might prove more attractive to a better type of staff because it might retain financial resources to cover the occasional lean periods.

It may be, too, that the company form could be used to provide principals with some form of pension scheme which at the moment is not available to the private practitioner or to the partnership. It is true that a committee has been considering the problem of tax relief for partnerships in connection with pension costs, and it may be that in due course the partnership will be put in much the same position as the employees of the larger companies and corporations. I believe it is true that if a man is to have a pension of £2,000 a year at 65 he must have saved £22,000 by that time—a virtual impossibility for the private practitioner. It is true that pension arrangements are not available to the controlling director of a company, that is to say to a director holding more than a 5 per cent. interest in the shares, but is it not possible to envisage an application of the company form to some part of professional activities so as to provide for reasonable pensions?

The traditional Institute objection to the

idea of a company is that the architect must for ever remain personally responsible to his client, and particularly in relation to any defects which may appear in the building he designs. But if the architect is allowed to insure against a mishap with a professional indemnity policy, the financial side of this personal responsibility can scarcely be said to remain as a stumbling-block. Is it not possible to envisage the company as providing at least as good a covenant as the firm: financially as strong or possibly stronger than the individual or firm, and as a continuing entity able to provide an even wider range and higher quality of services?

I think there is something deeper that underlies the traditional Institute attitude that there is something rather 'indecent' in the idea of the architect as a limited liability company, or as an unlimited liability company. This perhaps is a hang-over from the times when it was still not quite the thing for a gentleman to enter commerce and when the professions were much more respected. But it is an idea that does not fit in with the economic and social life of the country today.

The architect is working at a disadvantage which is not only a personal one but one that affects the profession as a whole, when it is compared with civil engineering. The civil engineer is allowed to be a director of a building or civil engineering company but the architect is not. But it seems that the cause of architecture might be better served if some of the big building firms had on their board an architect, in the same way that they have a civil engineer. The position as it stands is that the engineer is on the board and the architect is employed in a salaried capacity much lower down on the scale, where he has no say in policy.

I do not mean that all architects should rush to form themselves into companies or even that I would particularly like to be a company myself; but I do believe it would be a good thing if the opportunity were there, and I think it would be worth while to explore the advantages and disadvantages.

To summarise, the possible advantages as I see them are:—

- (1) The company structure, being less dependent on personalities, is more likely to achieve continuity.
- (2) The company structure might enable the architect to be stronger financially, to carry the firm over slack periods, and so to achieve continuity.
- (3) Clients might be more secure because of the stronger financial position of the architect and the continuing entity of the company.
- (4) The architect director, by delegating administrative work to the administrative expert, would be able to devote himself to architecture and better building.
- (5) There would be a possibility of retirement through participation in a pension scheme.



## The New Building of the Schools of Architecture and Town and Country Planning, Manchester University

Architects: Thomas Worthington and Sons [FF]

THE Manchester University School of Architecture was established in 1903 and thus is now in its fiftieth academic year. The R.I.B.A. recognised its three-year course in 1904. In 1922 the Honours Course (Bachelor of Arts with Honours in Architecture) was extended to five years and in the same year the R.I.B.A. recognised it. In 1935 Town and Country Planning became a separate study, normally post-graduate, to the profession of architecture, surveying and engineering. A recent development (1949) has been the institution of an Honours Course in this subject.

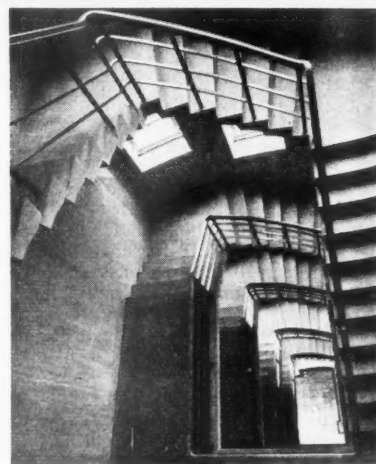
The building in which these two schools are now housed was opened on 17 October 1952 by the President R.I.B.A., Mr. Howard Robertson, M.C., A.R.A., S.A.D.G. It forms the fourth side of a quadrangular group of buildings occupied by the dental hospital, continuing the existing elevations, and has been so designed that it can form an extension to the hospital at some future date. This requirement has restricted somewhat the planning and architectural expression, as has also the confined site.

The building is designed to accommodate approximately 220 full-time undergraduate and post-graduate students in the studios and about 100 part-time evening students. The day-time accommodation is at present

filled to capacity and the evening students number about 85. There is no rigid demarcation between the two schools, some of the principal rooms being shared. The smallest drawing studio, on the ground floor, is used by planning students only; other planning students work side by side with the architects who are distributed in 'year' groups in the five remaining studios.

The ground floor houses the principal administrative rooms and in the basement are cloakrooms, lavatories, building materials display, model-making workshop and dark room. The three upper floors consist of studios, lecture rooms, library, criticism room and art room. The central staircase and lift form the main vertical circulation, the staircases at the ends being subsidiary and for fire escape.

The construction is steel frame, brick faced, and with hollow tile floors and roof. Partitions are hollow blocks. The hall and main staircase are lined with travertine. Floor finishes are of several types so that students can make comparisons of wearing and other qualities. For a similar reason a variety of hardwoods is used throughout the building. For example the floors of the entrance hall and ground floor corridors are of rubber tiles; lecture rooms, library, art room and criticism room, cork tiles;



View down the main staircase



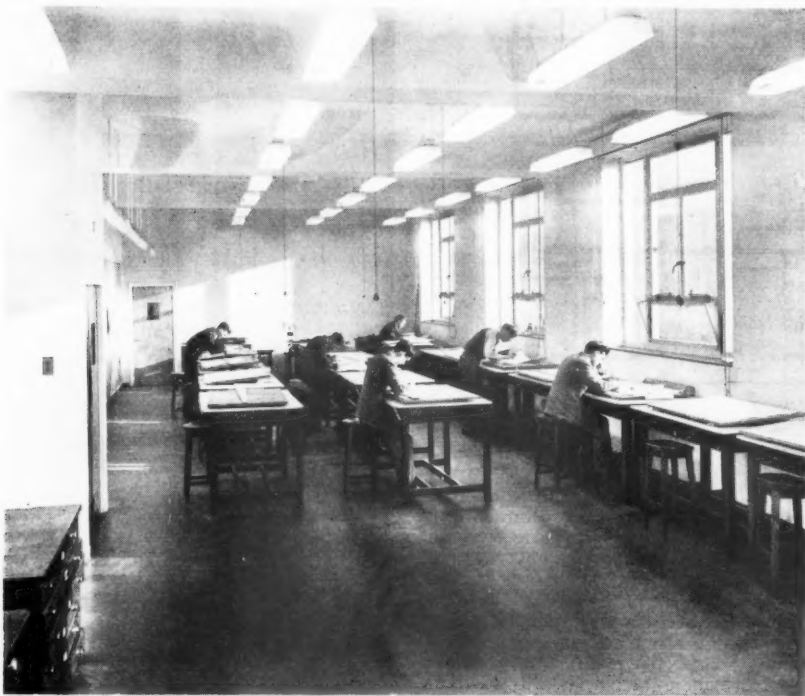
The entrance hall and main staircase are lined with travertine and the floor is rubber tiles. The enquiry counter is on the left







A typical lecture room. The triple blackboards, lantern screen, lights, window shutters and extract ventilation are push-button controlled from the panel on the right of the dais



A typical studio with independent fluorescent lighting to each desk

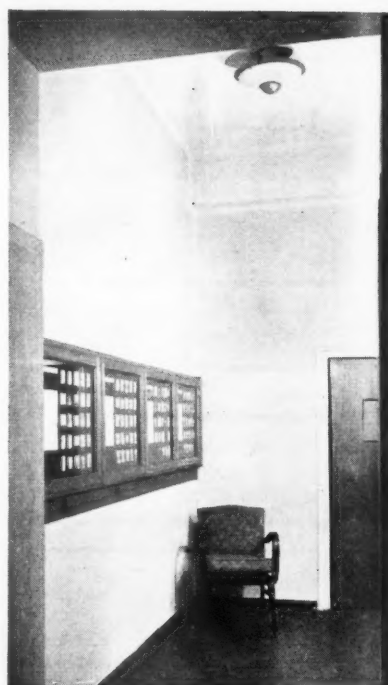
The studio benches have shallow drawers for instruments, etc., and above each is a fluorescent light controlled by the student. Round the room are plan chests allowing one drawer to each student. The windows are fitted with the modern equivalent of the

Venetian blind. Each studio has a shallow tank for stretching drawing paper and a glass-topped illuminated tracing table.

Outside the library are four frames in which collections of lantern slides are exhibited from time to time. A nearby



Oak cases in the library



The lantern slide frames are lit from behind and have spaces for explanatory notes

switch allows the slides to be illuminated from behind. This device permits students to study at leisure the illustrations used in lectures. Each frame has a place for a title and brief description of the exhibit.

The quantity surveyors were William Fishwick and Son; the structural engineering consultants, C. S. Allott and Son; the heating, lighting and ventilating consultants, Hoare, Lea and Partners; the general contractors, Robert Carlyle and Co. Ltd.; the clerk of works, Mr. Ernest Chetwood.

## The Shareholders' Meeting Room at Euston and the 'London on Wheels' Exhibition

MILLIONS MUST HAVE WONDERED where the grand staircase in P. C. Hardwick's Great Hall at Euston leads. It leads to the Shareholders' Meeting Room in which the old London and North Western Railway used to hold meetings of its shareholders—sometimes quite angry meetings. The Great Hall and Shareholders' Room are the principal elements in a building which commemorates the amalgamation of the London and Birmingham, the Grand Junction and the Manchester and Birmingham Railways in 1846. The London and Birmingham Railway had already built the Euston 'arch' to the designs of Philip Hardwick (the elder) seven years previously and the new amalgamation wanted a piece of architecture which would express its greatness. The result was the Great Hall, Grand Staircase and Shareholders' Meeting Room which, together with ancillary rooms, form a dignified building which is now 'lost' amid later accretions but which the British Transport Commission intend to preserve as an historical monument.

The first meeting in the Shareholders' Room was held on 17 August 1849. It is a handsome room of five bays in length and three in width and is approached from the Grand Staircase through three doors in one of its longer sides; the Roman Doric order has monumental scale. The room has been recently restored and redecorated under the direction of Mr. Christian Barman [F] and is well worth a visit by those architects who appreciate skilful and subtle colour decoration of handsome classic interiors.

A second reason for a visit is that the Room now houses an exhibition, 'London on Wheels', which was opened by Lord Hurcomb, Chairman of the British Transport Commission, on 20 May. This is the first of a series of exhibitions because the British Transport Commission has accepted the recommendation of its Committee on Relics and Records that the Room should be used for regular displays of historic material on transport. The Commission feels that there could be no better way of making the Room accessible to the public. Even if architects are not specially transport minded, they will find the illustrations of old railway architecture very interesting; the exhibition is also excellently mounted.

This is a first stage in the Commission's comprehensive programme for permanent exhibitions of transport in York (the existing Railway Museum), London and Edinburgh where objects associated with water ways, railways and road services will be on view.





# The Theatre Royal, Drury Lane

## Reconstruction of Auditorium

### Roof Architect: Joseph Emberton [F]

THE PRESENT THEATRE was designed by Benjamin Dean Wyatt and was opened in 1812, taking the place of the former building which had been destroyed by fire in 1809. In designing the roof trusses over the auditorium Wyatt employed the queen post truss system with princess posts and at the apex a small king post system, all members being suitably strutted. Oak was used for the king and queen posts and pine for the other members. The external roof covering consisted of close boarding and slates laid in diminishing courses; the slates were of exceptional size, some being as much as 3 ft. by 2 ft. by  $\frac{1}{2}$  in. thick. The average clear span of the trusses was 78 ft. 6 in. and this caused some interest at the time as the span was thought to be greater than that considered safe for queen post trusses.

In 1921 extensive internal alterations were carried out; the roof over the auditorium was not renewed but a new plaster ceiling was installed and was suspended from the timber trusses by timber hangers; in addition six heavy chandeliers were hung from the trusses and were raised and lowered by hand winches in the roof space.

Early in 1940 certain of the trusses were strengthened with metal straps and tie rods, but in July 1950 Mr. Emberton was called in by the management to report on the structural state of the roof. It was found that some members of the trusses had seriously deteriorated through age; joints which had been strengthened in 1940

showed signs of further movement, the scarf joint in one of the tie beams had opened and the truss had sagged  $4\frac{1}{2}$  in. at the centre, and in some instances the movement of the trusses had thrown the line of purlins as much as 5 in. out of level.

It was decided that the timber trusses were beyond repair and could no longer be relied on to take the required stresses, but the management was particularly anxious that the theatre should not be closed. It was agreed by all concerned that the timber trusses could not be replaced by a similar form of construction as it would not be allowed even if the type and quantity of timber could be obtained, and to strip the roof covering and reslate was out of the question if the theatre was to remain open, apart from the cost of such work. In view of all the circumstances it was finally decided to retain the existing purlins and roof covering and to erect new steel trusses inside the roof space.

It was agreed by the architect, the engineer and the district surveyor (who supervised the work on behalf of the Lord Chamberlain) that the work could be carried out, without closing the theatre, if the following conditions were observed: the existing roof covering must not be damaged, the suspended ceiling must also be protected from any possible damage and if anything did occur it must be at once reported to the district surveyor, and no work must be done while an audience was

in the theatre, as the falling of even a comparatively small piece of ceiling plaster could not be tolerated. Finally, at the end of each day's work a certificate must be sent to the district surveyor stating that everything had been left in a perfectly safe condition.

The programme adopted was to provide steel trusses in pairs at 4 ft. centres placed symmetrically about each timber truss and to wedge up the existing timber purlins off the steel trusses; the timber beams to be cut free of the walls and slung from each pair of steel trusses, and the existing timber hangers supporting the plaster ceiling and connected to the bottom cord of the timber trusses to be retained as far as possible.

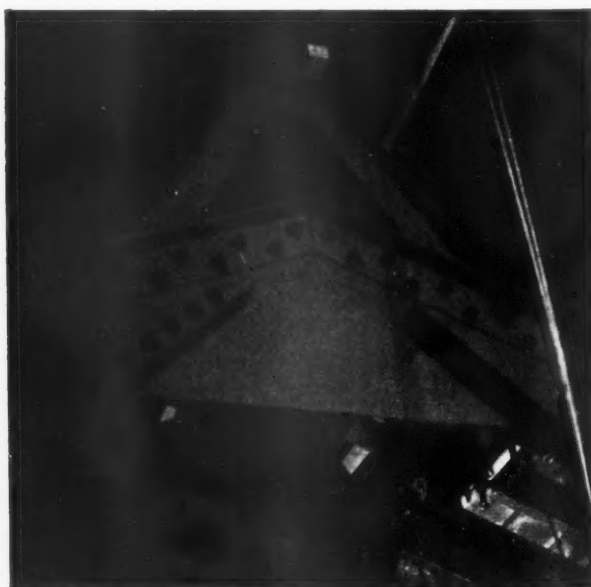
To carry out this programme it was first necessary to find a place for a platform on which to store materials before they were taken into the roof space, as it was unwise to throw too much weight on the timber trusses. As it happened the buildings on the Russell Street side of the theatre had valley-type roofs which finished just below eaves level and across these roofs temporary steel joists were placed and on them a tubular steel scaffolding was erected to support a working platform and hoist.

Owing to the condition of the walls flanking the auditorium it was decided to provide 18 in. by 18 in. continuous reinforced concrete spreader beams along their full length, but these spreaders had to be cast in separate lengths nearly up to each timber truss and were later connected when the trusses had been relieved of all loading. Numerous flues in the brick supporting walls were filled solid with concrete for a depth of some 10 ft. below the spreader beams.

The work was carried out by making access holes about 18 in. square in the external wall of the auditorium where the ends of the new steel trusses would come



Access hole and end of steel truss



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and through these holes the steel sections were threaded and were then supported by wire slings before being bolted together. Single ties were provided to the rafter backs and joist ties to the bottom cords between adjacent trusses.

Elaborate precautions were taken to prevent damage to the ceiling. An aluminium tubular scaffolding platform was erected from wall to wall, wide enough to accommodate one timber truss and its pair of steel trusses and to allow for a minimum of working space. The platform passed under the timber tie and the load was spread over three adjacent timber trusses, while tarpaulin sheets encased the sides and bottom of the platform, thus confining all men and materials to the protected area.

When the steel trusses had been bolted together they were allowed to take their bearing on the reinforced concrete spreaders, and the next step was to pick up the existing timber purlins. As none of the timber trusses had deflected to the same extent angle brackets were fixed about 5 in. below the inside of the purlins to permit the placing of hardwood folding wedges by which the old trusses could be relieved of all load from the roof covering. U-shaped cleats were made and fixed to the steel trusses to pick up the old ridge piece.

It was originally proposed to remove the whole of the timber trusses after the purlins had been wedged up to the steel trusses, but on further consideration it was agreed to cut away about 8 ft. of each end of the tie beams and to take away the bulk of the queen and princess posts and the whole of the rafters under the purlins. Double angles were then placed at suitable intervals across the bottom cords of each pair of steel trusses and U-shaped bolts were passed under the timber tie beams and up between the angles to which they were then connected.

As the erection of the new trusses progressed the ventilation trunking in the roof space was re-supported, thus freeing the old timber construction of all loading arising from this source. Additional channel bearers were fitted between the new trusses to support the chandelier winches. After the whole of the loading due to the existing roof left in place and the ceiling had been transferred to the new trusses the reinforced concrete spreaders were completed.

When the main structural work was finished the parapet walls were rebuilt, as they were unsafe owing to the thrust imposed on them by the main rafter members of the old timber trusses. The gutters were then asphalted, hardwood walkways provided, and the usual odds and ends of making good were done. The work was completed in November 1952.

It says much for the precautions and the care taken during the execution of the work that nothing occurred to give reason even to consider the abandonment of a performance in the theatre.

The consulting engineer was Mr. A. E. Beer, A.C.G.I., M.I.Struct.E., M.Cons.E., assisted by Mr. G. T. Lynn, A.M.I.Struct.E.

The general contractors were Messrs. A. Roberts & Company, Ltd.

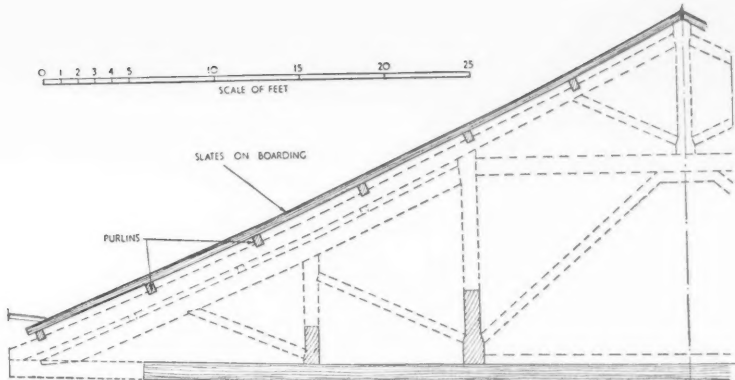


Diagram of the original timber trusses. The dotted lines indicate portions removed. The sagging of the bottom member is apparent

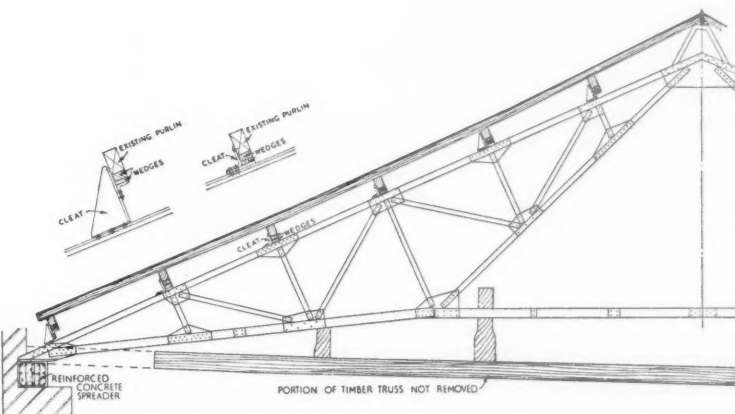
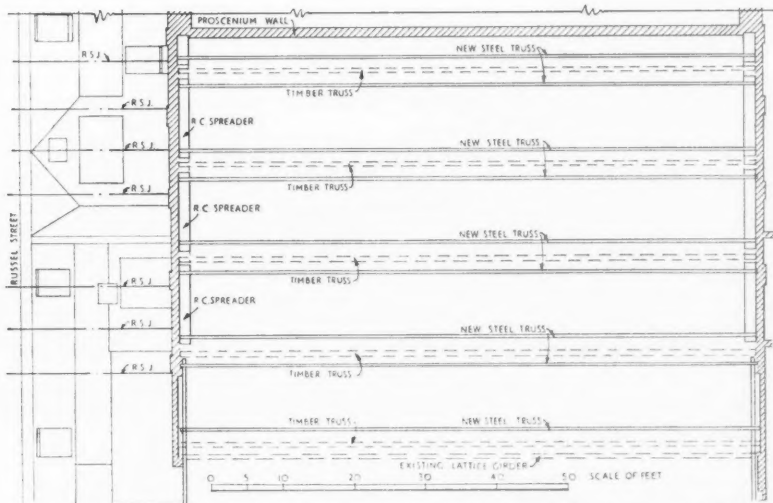


Diagram of the new steel trusses. The larger scale diagrams show the method of supporting the original purlins



Plan of the roof trusses, showing a steel truss on each side of an original truss. The left-hand side of the drawing shows the R.S.J.s placed over the Russell Street roof to support the working platform

# The de Wailly Affair

By Peter Collins [4]

THE ACADEMY OF ARCHITECTURE'S spirited resistance to Louis XV's arbitrary appointment of Charles de Wailly as a senior member of that body is a detail of the French struggle against royal privilege which has up till now received little attention. To what extent it was a personal act of the king, as opposed to that of Marigny, the minister responsible, it is impossible to say. The Marquis de Marigny was the brother of Madame de Pompadour and like all upstarts he liked to assert his authority; de Wailly was assistant architect for Versailles, but it seems unlikely that the king would for this reason show a great personal interest in his advancement.

On 25 May 1767 the Academy received a letter, written the previous day at Marly and signed by Marigny, which declared that the king wished to appoint de Wailly direct to first-class membership of the Academy, and thus fill a vacancy which had existed since the new royal statutes had augmented the Academy in 1756. The Academy, in obedience to the royal instructions, duly installed de Wailly, but decided to protest. For this purpose, a letter was drawn up by a sub-committee, and approved by the Academy on 1 June.

This protest claimed that in accordance with the first statutes established in 1717, appointments to the first class had always been made by promotion from the second class, and that de Wailly was showing no little presumption in wishing to pass ahead of his colleagues by illegal means. Marigny's reply to the secretary of the Academy, dated from Versailles on 14 June 1767, was unequivocal and ominous: 'I have received the representations which the Academy has thought fit to address to me regarding the King's nomination of M. de Wailly to fill the place left vacant, since its creation, in the first class. As the Academy began by properly respecting His Majesty's wishes, I shall not take these representations in bad part, but I am somewhat grieved to see that the Academy shows a faulty understanding of the situation. They should have perceived that the King is only using a right which belongs to him essentially, and which is quite distinct from those he has been good enough to grant to the Academy.'

Upon reading this letter, the Academy appointed another and larger sub-committee, who drafted another and longer letter which was approved on 30 June. This second letter restated the case, pleaded the danger of creating a precedent for ignoring the statutes, and dwelt on the mortification experienced by members of the second class at being thus passed over. It included the significant phrase: 'Formal laws can only be abrogated by other laws equally formal.' Marigny's reply was dated from Compiègne, 18 July 1767, and read as follows: 'I have just given the King an

account of the question raised by his Academy of Architecture, and I joined to my report the two letters of representations addressed to me. His Majesty orders me to inform his Academy that he is very displeased to see them complain against a favour he has thought fit to confer; none of his architects<sup>1</sup> can ignore that he may, when he wishes and without regard to the forms he prescribed to his Academy for normal elections, place in the first class any person he may consider worthy of this distinction. . . . I have shown this letter to His Majesty before sending it to the Academy.'

The Academicians remained undaunted by Marigny's reply and, adding yet two more members to their special committee, charged these ten to draw up a *placet* for submission direct to the king. This *placet*, after recalling the honour of the king's attendance at a meeting of the Academy in 1719 (when he was nine years old), protests that the sole motives in objecting to de Wailly's election are the honour of the Academy, the maintenance of its regulations, and the desire to retain his royal protection. After repeating once more their rights as they understood them, and recounting the steps they had already taken in the matter, the *placet* terminates: 'How great, Sire, will be your Academy's affliction and distress if it is no longer supported by the hope of soon seeing your anger cease. Deprived of its laws and of Your Majesty's protection, its existence would be more painful than its entire abolition.' To this *placet* was appended a lengthy memorandum setting out once again the whole case in detail, and a deputation of four Academicians was appointed to take the documents to the court at Compiègne.

Having aroused the wrath and antagonism of Marigny, the deputation was in some doubt as to the best way to approach the king. It was finally decided to make use of the good offices of Louis Phelippeaux, comte de Saint-Florentin, who filled the office of Minister of the Household, and who—what was far more important—disliked Marigny. But delay followed delay, and by 7 September 1767, the last meeting of the Academic session, the *placet* had still not been presented.

Suddenly, in the middle of the vacation, Marigny acted. On 2 October 1767 he wrote from Versailles: 'The King has seen with renewed displeasure the manner in which the Academy is conducting itself, and notably its lack of respect and submission to His Majesty's latest orders, notified in my letter of 18 July. Informed, moreover, of the abuses which have crept into the Academy, and wishing to remedy these by substituting a body better able to fulfil his requirements, both for the

teaching and improvement of architecture, His Majesty orders that until further notice, when he shall have made known his intentions concerning the new establishment he envisages, he has revoked and annulled not only the *brevets*<sup>1</sup> of all the Academy's members, expressly forbidding them to qualify themselves by the titles conferred on them by the said *brevets*, but also the right to assemble and act together under the said titles or relative to their present possession of them until now. His Majesty has at the same time suppressed all appointments and functions relative to the said Academy, as well as the fees and emoluments resulting from the same.'

But Marigny's antagonism had overreached itself, and his own humiliation followed swiftly. It can be imagined with what delight each Academician must have received the following letter from his hand, dated at Fontainebleau on 13 October 1767: 'Monsieur le comte de Saint-Florentin has done me the honour of informing me that since your position as member of the Academy of Architecture was authorised by a *brevet* emanating from him, as Secretary of State for the Royal Household, the revocation of your *brevet*, decided by the King on my report, can similarly only be effected by him. This being the case, the letter I wrote you on the second of this month must be regarded as not having been sent; His Majesty will let us know what he wishes to do in this matter through M. le comte de Saint-Florentin.'

The end of this dramatic episode was contained in a letter from Saint-Florentin to Ange-Jacques Gabriel, the king's chief architect and President of the Academy. It was also dated 13 October 1767 and written from Fontainebleau: 'I have informed the King of what has happened at the Academy relative to the reception of M. de Wailly, and of the letter you have lately received from M. le Marquis de Marigny. His Majesty's intention is that having nominated M. de Wailly to a place in the first class, into which he has been received by the Academy, he should continue to enjoy it, but His Majesty is quite agreeable that this example should in no way be taken as a precedent, or be prejudicial to the Academy statutes. His Majesty at the same time commands me to inform you that in terminating this matter concerning M. de Wailly, he desires that M. le Marquis de Marigny's last letter written on his behalf be regarded as not having been sent, and that consequently members of the Academy shall still continue to hold their *brevets*. Nevertheless, His Majesty disapproves the Academy's conduct with reference to M. le Marquis de Marigny.'

'It is requested that a copy of this letter be sent to all the members of the Academy.'

For the next few months, the relationship between the Academy and the Marquis de Marigny was adorned by mutual exchanges of quite overwhelming politeness.

<sup>1</sup> The official title of a member of the Academy was *Architecte du Roy*.

<sup>1</sup> The *brevet* was their commission as *Architecte du Roy* which, amongst other things, entitled them to draw the emoluments attached to the office.



# A.B.S. Annual General Meeting 1953

THE ANNUAL GENERAL MEETING of the Architects' Benevolent Society was held at the R.I.B.A., 66 Portland Place, on 6 May. Mr. Howard Robertson, M.C., A.R.A., S.A.D.G., President of the R.I.B.A., was re-elected President of the Society and Mr. H. S. Goodhart-Rendel [F] was re-elected Honorary Treasurer. Mr. Howard Lobb, C.B.E. [F], was elected Honorary Secretary of the Society in succession to Mr. Charles Woodward [A], who has retired after having held the office since 1949; Mr. Woodward was elected a Vice-President of the Society. Sir Harry Vanderpant [Hon. A] and Mr. Michael Tapper, M.C. [F], were re-elected Honorary Auditors.

The President, Mr. Howard Robertson, in moving the adoption of the Annual Report, Statement of Accounts and Balance Sheet, said:

'Although the funds of the A.B.S. show a gradual increase, this is not nearly enough to meet the increase in the number of applicants nor in the actual amount we require to help them. We are grateful to those who support us, and hope they will persuade more to do so. We like to be told what good work the Society does, but we would be all the more pleased for a little more financial help with which to do it.'

'There are now seventeen thousand names on the Register of Architects, but there are less than three thousand contributors to the A.B.S., a shockingly small proportion of the profession. Back in 1939 my late partner, Stanley Hall, during his term of office as President, launched a Half-Crown Appeal at Christmas, asking all architects and assistants to send at least half a crown to the Society's funds. This raised £747, but if he had received seventeen thousand half-crowns it would have brought in £2,125. In this Coronation year we might repeat the same thing, but ask for crowns instead of half-crowns. If all the seventeen thousand sent something this would bring in £4,250, and some might give more. I put that to you as a suggestion; it would make a lot of difference to our funds, and therefore to those we are trying to help.'

'We recently had a donation from an architect "to mark the close of an unusually successful year". Another architect, who has signed a seven-year covenant, says that he would like to be able to do more because at one time he might well have had to ask for help himself. These two architects have shown imagination and sympathy, which is very welcome to us, and we are grateful for their generosity. I hope that others may follow their example.'

'We are hoping to increase interest in the A.B.S. by appointing a representative of the Society in each Allied Society in the country as well as in each Chapter and Branch. These representatives would report each year on the position in their areas as to subscribers and donors obtained, on functions organised in aid of the A.B.S., and

also on any cases brought to the notice of the Society as in need of help. We have been discussing the appeal to possible donors which might take the form of a description, of an actual case with all its harrowing details, though without revealing the identity, and we hope to follow this up.'

'Our project for providing our old people with homes is not sufficiently advanced yet for us to begin building, but we have now collected enough to justify our looking for a site. We have found some land which seems suitable, and if we can obtain planning permission we shall soon be issuing details of a competition for the design of the homes. We shall need a great deal more money to enable us to build these homes, and we hope everyone will do his best to bring in the necessary funds. Our annual Ball, which is held in aid of this scheme, was a great success last year, and I hope that this year it may be even more successful.'

'I now turn to a more personal note in expressing our regret that Mr. Charles Woodward is retiring from his position as Honorary Secretary of the Society. His connection with the A.B.S. dates back to 1909, although his father had been a member of the A.B.S. Council on a number of occasions before then. In 1928 Mr. Woodward was first elected a member of the Society's Council, and he has served almost continuously since that date. In 1933 he was appointed Honorary Auditor, which position he held until 1949, when he became Honorary Secretary in succession to the late Sir Charles Nicholson. Mr. Woodward's service to the Society therefore extends over a great many years, and he is entitled to some respite, even though we greatly regret losing him from our counsels. However, there is a shaft of light through the clouds; we have persuaded Mr. Woodward to allow us to nominate him as a Vice-President of the Society, and I wish to propose his election in appreciation of his work and guidance in the Society's affairs.'

'I would like to conclude by paying a tribute of appreciation to the A.B.S. Staff, and to all those who have helped in the work of the Society, and also in connection with the Ball.'

The Vice-Presidents and Council were elected as follows:

**Vice-Presidents:** Sir Harry Vanderpant, Barrister-at-Law [Hon. A], Sir Banister (Flight) Fletcher, D.Lit., F.S.A., F.S.I. [F], Mr. H. S. Goodhart-Rendel [F], Mr. W. H. Ansell, M.C. [F], Sir Lancelot H. Keay, K.B.E. [F], Mr. Digby Solomon [F], Mr. Charles Woodward [A].

**Members of Council:** Mr. Michael Tapper, M.C. [F], Mr. G. F. Whitby, M.B.E. [A], Mr. S. E. T. Cusdin, O.B.E. [A], Mr. R. O. Foster [F], Mr. Edward Maufe, R.A. [F], Mr. G. E. Soulsby [A], Mr. D. A. Thomer-

son [F], Mr. Peter Dunham [F], Mr. Hubert Lidbetter [F], Mr. Peter Shephard [A], Mr. A. Llewellyn Smith, M.B.E. [F], Mr. A. E. Wiseman [F], Mr. T. Talfourd Cumming [F] (Representing the Berks, Bucks and Oxon Architectural Society), Mr. S. N. Cooke [F] (Birmingham and Five Counties Architectural Association), Mr. H. J. Hammick [F] (Devon and Cornwall Architectural Society), Mr. R. A. Cornell [L] (Essex, Cambridge and Herts Society of Architects), Mr. H. G. Coulter, M.B.E., M.C. [F] (Herts Chapter, Essex, Cambridge and Herts Society of Architects), Mr. C. J. Jerram, D.S.O., D.S.C. [A] (West Essex Chapter, Essex, Cambridge and Herts Society of Architects), Mr. Ernest Bird [F] (Hants and I.O.W. Architectural Association), Mr. M. G. Gilling [A] (Liverpool Architectural Society), Mr. Francis Jones [F] (Manchester Society of Architects), Mr. R. Cawkwell [F] (Sheffield, South Yorkshire and District Society of Architects), Mr. Cecil Burns [F] (South Eastern Society of Architects), Mr. N. R. Paxton [F] (West Yorkshire Society of Architects), Mr. J. R. Leathart [F] (Architectural Association), Mr. G. R. Hutton [F] (County Architects Society), Mr. W. H. Scanlan (Institute of Registered Architects), Mr. F. G. Sainsbury [L] (Incorporated Association of Architects and Surveyors), a representative of architectural students.

A motion to rescind the resolution for the incorporation of the Society was passed, and a scheme for the setting up of a Charitable Trust to be named 'Architects' Benevolent Society Homes' under the jurisdiction of the Charity Commissioners was approved.

## Review of Films

*The country of origin and date of release are given first. The film is in monochrome unless otherwise stated. The sizes (35 mm. and 16 mm.) are given. Sound films are marked 'sd', and silent 'si'. The running time is given in minutes.*

(F) indicates free distribution.

(H) indicates that a hiring fee is payable.

### Domestic Hot Water

Britain 1951 (F)

**Summary.** An explanation of domestic hot water systems. Principle of convection, its use to circulate water from boiler to storage tank; the storage tank and cold water cistern in relation to the bathroom and kitchen; water pressure. Electric immersion heaters and mechanism of the thermostat control. Need for and methods of lagging.

**Appraisal.** A useful film with an interesting commentary and excellent photography. The technical explanations are particularly well done and unusually good use is made of clear and well-presented diagrams.

16 sd., 15 min. Age group 13 and upwards. Obtainable from British Electrical Development Association, 2 Savoy Hill, W.C.2.

# Practice Notes

Edited by Charles Woodward [4]

**IN PARLIAMENT. Carlton House Terrace.** Lord Mottistone: My Lords, I beg to ask the Question which stands in my name on the Order Paper. (The Question was as follows: To ask Her Majesty's Government whether they have any observations to make concerning the future of Carlton House Terrace.)

The Parliamentary Under-Secretary of State for the Colonies (The Earl of Munster): My Lords, it will be remembered that this subject was raised in your Lordships' House on March 6, 1951. The House was then informed that the previous Government were satisfied that the present premises of the Foreign Office were inadequate and would have to be replaced. They were also satisfied that Carlton House Terrace, reconstructed behind the present elevations facing the Mall and the Duke of York's Steps, would be a very suitable site for this purpose. Having regard to the need to curtail Government expenditure in the present economic situation Her Majesty's Government think it unlikely that work can start for some years.

Lord Mottistone: My Lords, in thanking the noble Earl for his reply, I should like to ask this supplementary question. Are Her Majesty's Government in favour of preserving, without material alteration, the façades of Carlton House Terrace facing the Mall, which are a supreme example of civic architecture?

The Earl of Munster: My Lords, I have no desire to range over the whole subject of whether Carlton House Terrace should be maintained in its present form. I feel that it would be far wiser to await a final decision about the future of Carlton House Terrace, and until there is some prospect of work starting. (House of Lords. 12 May 1953.)

**Housing (Building Licences).** Asked how many houses under 1,000 sq. ft. and for how many between 1,000 and 1,500 sq. ft. building licences have been issued since the beginning of this year, the Minister of Housing and Local Government replied: Licences for 20,011 houses were issued in the first quarter of 1953. Of these, approximately 65 per cent. were for houses of under 1,000 sq. ft. and 35 per cent. for houses between 1,000 and 1,500 sq. ft. (22 May 1953.)

**MINISTRY OF HOUSING AND LOCAL GOVERNMENT. Defence Regulation No. 50.** Circular 31/53 dated 5 May 1953 addressed to Housing Authorities in England, London County Council and other County Councils (for information) reminds them that Defence Regulation No. 50 ceased to have effect on 10 December 1952. The Regulation enabled action to be taken by the Authority in demolishing and clearing away property damaged by war operations.

Action can no longer be taken under the

Regulation to eliminate danger to the public from war-damaged structures, and such structures will have to be dealt with under the Authority's ordinary statutory powers.

In the event of the work of removing the danger being undertaken by the Authority in default of or by agreement with the owner, the Authority will be in the same position as a private owner as regards claiming from the War Damage Commission the cost of any work carried out. The Commission will require to be consulted before any work is begun in order that the extent of their liability may be determined. In urgent cases the Commission's Regional Manager should be informed by telephone.

If the Authority propose to do the work with the agreement of the owner of the property they should not enter into any such agreement until the Commission's Regional Manager has informed both the Authority and the owner the extent of the work for which the Commission can accept liability. No claims can be considered by the Commission in respect of work carried out to a property by a Local Authority after service of a Notice to Treat in respect of it.

**Movement of Population to New and Expanded Towns.** Circular 29/53, dated 6 May 1953, concerns the arrangements to be made for securing the transfer of families to new and other towns whose development can assist the decentralisation of the congested areas of Greater London; and for ensuring that the houses to be built in these towns and now being built in the new towns will be made available, so far as possible, to the people most in need.

The Circular is too long to reproduce in these Notes but it is obtainable at H.M. Stationery Office, price 4d. An Appendix to the Circular gives a specimen form of application for those who are willing to move to a new or expanded town if work is available there.

**Valuation for Rating Bill.** This Bill was given a first reading on 8 May and a second reading on 21 May, and its purpose is to provide a system of ascertaining the gross value of dwelling houses for the purposes of the new valuation lists, in place of the methods laid down in Part IV of the Local Government Act, 1948. The Ministry have issued the following note indicating the difference between the valuation-for-rating procedure under the 1948 Act and under the new Bill:—

1. The 'gross value' for rating purposes means 'the rent at which a hereditament might reasonably be expected to let from year to year if the tenant undertook to pay all normal tenants' rates and taxes and if the landlord undertook to bear the cost of the repairs and insurance, and the other expenses, if any, necessary to maintain the hereditament in a state to command the rent.'

2. This basis was departed from as respects dwelling houses in the Local Government

Act, 1948, in the belief that satisfactory rental evidence was not available, and that unfairness would result from trying to apply it.

3. Investigations carried out by the Board of Inland Revenue showed, however, that the methods laid down in the 1948 Act under which some houses were assessed on the basis of cost of construction in 1938 and others on actual rents in 1939 produced indefensible anomalies. They have also shown that the spring of 1939 offered sufficient evidence of rents in a free market to enable all houses to be fairly assessed on 1939 rental levels.

4. The main purpose of the present Bill is to revert to the normal valuation test referred to in (1) above, but using the 1939 rental values for all classes of houses.

**Cement.** Circular 38/53 dated 29 May 1953 issued to Authorities in England calls attention to the shortage of cement in some areas. The Minister hopes that Authorities will instruct their officers to see that cement is used for only the most essential purposes and that even there it is used economically. In particular he suggests that housing authorities can relieve the situation by instructing their contractors, if they have not already done so, to make the maximum use of lime in mortar.

**Town and Country Planning Act, 1953.** This Act came into operation on 20 May 1953. It abolishes development charge for development commenced on or after 18 November 1952. The whole of any development commenced before that date remains liable to development charge. Where the charge has already been paid but development has not commenced the amount of the charge is repayable. The distribution of the £300 million fund in respect of depreciation of land values is stopped.

The assignment of claims, subject to certain exceptions, requires the approval of the Central Land Board.

(A memorandum issued by the Central Land Board was published in the JOURNAL for May at p. 289.)

**NATIONAL JOINT COUNCIL FOR THE BUILDING INDUSTRY. Revision of rate of lodging allowance.** The Council at its meeting on 29 April 1953 decided to revise the stipulated rate of lodging allowance by making it seven shillings per night instead of the existing rate of six shillings. The Council decided that the new rate should take effect on and from 1 June 1953.

**AGRICULTURAL LAND (REMOVAL OF SURFACE SOIL) ACT, 1953.** This Act came into operation on 20 May 1953.

The stripping of surface soil from land on any substantial scale is development within the meaning of the Town and Country Planning Act, 1947, since it involves operations on the land of a kind referred to in subsection (2) of Section 12 of the Act. Planning permission is therefore required. It has, however, been found that

where large-scale operations are commenced without planning permission much harm can be done before enforcement action under the provisions of the 1947 Act can be made effective.

The Agricultural Land (Removal of Surface Soil) Act, 1953, makes it an offence to remove surface soil from agricultural land with a view to sale when the operations constitute development within the meaning of the 1947 Act and are carried out without permission. The amount of soil removed must amount to more than five cubic yards in any period of three months and the consent of the Attorney-General or the Director of Public Prosecutions is necessary before any prosecution can be brought. Penalties on summary conviction are severe, being for the first offence a fine not exceeding £100, with much stricter penalties for the second and subsequent offences. (Circular 26/53 addressed to Local Authorities in England and Wales by the Ministry of Housing and Local Government.)

**LAW CASES. R. C. P. Holdings Ltd. v. Rogers.** In the Chancery Division on 27 March 1953 it was decided that a right of way over a track on the plaintiff's land used for agricultural purposes could not be extended for use in giving access to a field used by the defendant as a camping site. Used in the manner proposed it would constitute an unjustifiable increase in the burden of the easement. (CURRENT PROPERTY LAW, May 1953.)

**David Taylor and Son Ltd. v. Barnett.** (3, 4 March 1953.) The Court of Appeal in this case decided that where the contract was one for the sale of goods, the agreement was illegal as the selling price was in excess of the maximum fixed by statutory order made under the Defence Regulations. The seller of the goods failed to deliver and the buyer referred the dispute to arbitration under the contract. The question of illegality was raised before the umpire, who nevertheless found in favour of the buyer. A motion to set the award aside came before the Court under the Arbitration Act, 1950, and, on appeal, before the Court of Appeal. There, it was held that the award was bad and must be set aside since the umpire had misconducted himself in law. The Court said that there is not one law for arbitrators and another for the Court, but one law for all. If a contract is illegal arbitrators must decline to award on it just as the Court would do, and even in arbitrations, where a protest is made against jurisdiction, the party protesting is not bound to retire; he may go through the whole case, subject to the protest he has made. ((1953) 1 All E.R. 643.)

**Davis v. Artizans Estates, Ltd.** In this case judgment was given on 12 May for the plaintiff.

The plaintiff claimed against the defendants, leaseholders of neighbouring property, for damage caused to his house by the roots of Lombardy poplar trees growing on the defendants' land. The trees

were about 30 years old and about 60 ft. high. He had to have his house underpinned, some brickwork rebuilt and the drains relaid at a cost of £1,279. It was alleged that the poplar trees caused exceptional absorption of moisture from the ground and drained the plaintiff's land, and in the drought of 1949 his house was considerably damaged. The house was built about 1930.

The defence was that the defendants did not become owners of the leasehold interest until March 1949, and were at no time the occupiers.

In giving judgment his Lordship said that his view was that the case fell to be decided only on the question of nuisance and that he was deciding the case upon the basis of the potential liability of an owner for a nuisance, even though the owner was not the occupier of the premises. The roots of some of the poplar trees had extended into the plaintiff's land; it was impossible to say that some of the damage to the plaintiff's house was not due to the poplar trees; it was impossible to say that some of the damage to the plaintiff's house was not due to absorption of water from the land by the defendants after March 1949; the poplar trees constituted a nuisance and there was in law a continuance of the nuisance by the defendants; the defendants retained control of the trees as owners although they were not occupiers, and therefore they were liable to the plaintiff.

Judgment was given for the plaintiff for £1,325 with costs. A claim for £1,737 for alternative accommodation, including removal, while the work was in progress, was disallowed, his Lordship saying that it is not right that because a man has a claim which is right in law he should put forward a claim for damages which he cannot justify. He has a duty to put forward a claim which he can justify, and the law demands that he should mitigate his damages.

A stay of execution for 21 days was granted, pending consideration of an appeal, on payment into court of the judgment moneys. (THE ESTATES GAZETTE, 16 May 1953.)

**Corless v. Reece and Another.** (14 May 1953.) In this action, in the Queen's Bench Division, the plaintiff sued a demolition contractor on the grounds that the demolition of the adjoining premises had weakened the flank wall of his premises and taken away support to which he was entitled. The owners of the adjoining premises were joined as defendants.

The plaintiff's flank wall, abutting on the defendants' premises, was built to a certain height in 4½ in. brickwork and completed in 9 in. brickwork, leaving an overhang of 4½ in. on the upper part.

The defendants claimed that the plaintiff was not entitled to a right of support because the flanking walls in respect of which damage was claimed were not in contact, and that the damage to the plaintiff's premises was not due to the demolition.

In giving judgment for the defendants his

Lordship said the plaintiff had to satisfy the Court that he or his predecessors had acquired a right to lateral support of his building by open uninterrupted enjoyment of it for 20 years. Secondly, the plaintiff had to satisfy the Court that as a result of the withdrawal of that support his building had suffered damage.

His Lordship said that the plaintiff's premises, built about 100 years ago, were built after the defendants' premises and that a cavity existed between the two flanking walls. The only contact between the flanking walls was in one place, where protruding mortar from the plaintiff's premises had been flattened against the defendants' premises. His Lordship came to the conclusion that the buildings were deliberately kept apart, and if, unknown to the builder, some contact was nevertheless achieved by mortar squeezing through and resting against the defendants' wall, that could not possibly amount to an open enjoyment of a right of support. Even if the plaintiff had established a right to support he had not satisfied the Court that the withdrawal of the defendants' flank wall had caused the damage alleged. There certainly had been support from the front and rear walls of the defendants' premises and that support had been withdrawn, but the withdrawal had not caused damage.

Judgment was entered for the defendants, with costs. (THE ESTATES GAZETTE, 23 May 1953.)

## Book Reviews

**Charles Rennie Mackintosh and the Modern Movement**, by *Thomas Howarth*. (Glasgow Univ. Pubns., xciv.) 9½ in. xxix + 329 pp. + 96 pp. of plates and 28 text illus. Routledge and Kegan Paul. 1952. £3 3s.

Charles Rennie Mackintosh made a sufficiently individual contribution to the Secessionist architecture of the 1890's and of the first decade of the present century to justify this full-length study of his life and work. Through the generous support of the University of Glasgow and of the Carnegie Trust for the Universities of Scotland Dr. Howarth has been enabled to embody the fruits of seven years' assiduous research and critical reflection in a quarto volume that is both copiously illustrated and finely produced. With admirable patience and pertinacity he has established the facts—often obscure and difficult to verify—on which any informed judgment of Mackintosh's part in the *art nouveau* movement must be based. So thoroughly indeed has Dr. Howarth carried out this part of his task that it is unlikely that anything more of significance remains to be discovered, either from surviving documents or drawings or from people still living who actually knew Mackintosh.

Not every reader will accept Dr. Howarth's valuation of Mackintosh as a rare genius who 'walked alone treading a solitary path somewhere between the uncompromising materialism of the German



school and the pleasant romanticism of the Secessionists, subscribing to both, indebted to neither.' Nor will everyone agree with the thesis that Mackintosh exercised 'a powerful directive influence' on developments in Vienna. But whether one is persuaded by Dr. Howarth's arguments concerning these issues or not, he has beyond question produced a work of absorbing interest that is fully worthy of its theme and a valuable and welcome addition to architectural literature.

Dr. Howarth prefaces his study by an introduction in which the historical background to his subject is concisely and usefully surveyed. The study itself falls into two parts: the first being concerned with Mackintosh's career as a student, assistant and architect, with his relationships with his Scottish contemporaries, with his principal works, his successes and failures—with, in short, the whole tragic story of his rise, brief triumph and eclipse; the second dealing with the secessionist movement outside Scotland, with English and Continental sources and influences and with the nature and value of Mackintosh's personal contribution to what is loosely termed 'modern architecture'.

An epilogue modestly records the successful outcome of the efforts that have been made in recent years, largely thanks to the zeal of Dr. Howarth himself, to ensure that some at least of Mackintosh's most representative work shall be permanently preserved. Collections of his furniture, decorative schemes, drawings and water-colours have been appropriately housed, one under the guardianship of the University of Glasgow, the other in the keeping of the Glasgow School of Art; whilst one of the famous Cranston Tea Rooms, with its furniture, has been bought by the Glasgow Corporation, so that the interior can be restored and made available as a centre for the activities of cultural societies and part of it maintained as a memorial to Mackintosh and his wife.

The period of Mackintosh's effective practice as an architect extended from 1896 when, at the age of 28, he won the competition for the Glasgow School of Art, to 1909 when the west wing of that work was completed. A few commissions of some interest came to him in later years, but by then he was already in decline and his active concern with architecture had ceased long before he died in 1928. His reputation as one of the pioneers of the rebellion against the perpetuation of obsolete conventions in architecture rests almost entirely upon what he accomplished in a relatively short spell of intense industry and enthusiasm.

During that productive phase he was sustained by the conviction that a Scottish Renaissance in the visual arts was not merely possible but was actually imminent and that it was his mission to lead that Renaissance in architecture. A new national style was to be evolved that should have its roots in the past and yet be contemporary in spirit. Inspired by this vision, he drew upon both old and new sources for ideas, combining the traditions of Scottish

vernacular building with forms of decoration in which Japanese and Pre-Raphaelite influences are as evident as those of Aubrey Beardsley. As a sincere romantic he developed considerable skill in picturesque composition and exceptional ingenuity in devising novel decorative effects. The first of these aptitudes he showed in his well-known houses, Windyhill, Kilmacolm and Hill House, Helensburgh, and again in the composition of the east façade and of the library wing of the Glasgow School of Art; the second he exploited throughout the interiors of the Cranston Tea Rooms. But his claims to be included amongst the liberators of 20th-century architecture are founded upon more solid grounds than these. In his bold handling of the lighting and other problems presented by the programme of the Glasgow School of Art—the building with which his name will always be associated—he made imaginative use of the technical resources that were available to him and in so doing proved himself to be a pioneer in his own right.

If he could have freed himself from the limitations of 'the Glasgow style'—as he did to some extent in the Willow Tea Rooms in Sauchiehall Street and still more in his addition to Mr. Basset-Lowke's house, Northampton—he would have consolidated his position decisively. He failed, however, to emancipate himself from what Dr. Howarth calls 'the quasi-dream world' of his wife and of his early associates, the MacNairs. Throughout the greater part of his architectural practice he continued to rely upon the same repertoire of motifs—art-lilies, tulips and hearts, beads and bubbles, pieces of coloured glass and crystal globes suspended on wires, undulating linear patterns and mystical symbols—and to design furniture whose vertical elements too often tended to be unduly elongated.

All artists normally need some measure of appreciation, and for a time Mackintosh had his share. In Glasgow itself he could count on the understanding and loyalty of a small but generous group of admirers that included Francis Newbery, Miss Cranston and the Davidson family. Outside his native city he had the enthusiastic backing of Gleeson White, the editor of *THE STUDIO*, then circulating widely on the Continent. Alexander Koch, the publisher of Darmstadt, editor of *ACADEMY ARCHITECTURE* and *DEKORATIVE KUNST*, was another ardent supporter. So too was Hermann Muthesius, the one-time cultural attaché to the German Embassy in London, who became through his contacts and writings the most influential interpreter of the new movement in architecture and who hailed Mackintosh as one of the few 'truly original artists and genuinely creative minds' of that movement. Mackintosh's contribution to the Secessionist Exhibition in Vienna in 1900 was received with flattering acclamation by the Continental leaders of the revolt against 'academicism'. Exuberant students drew him in a flower-decked carriage through the streets of the Austrian capital and the art editor of the Vienna *RUNDSCHAU*, in an ecstasy of

appreciation, described the 'Christ-like mood' of his work.

That was the climax. Never again was Mackintosh to be the object of such adulation. The high hopes with which he returned to Glasgow were, he soon discovered, illusions. His kind of architecture he found was in general not acceptable. Those who were in a position to pay for it did not like it; and he for his part was temperamentally incapable of compromise. Denied the great opportunities to which he had so confidently looked forward, frustrated—as he saw it—by malignant hostility and Philistine indifference, Mackintosh became, in the conventional phrase, his own worst enemy. Embittered and in a state of moral and physical collapse, he had finally to abandon architectural practice in Glasgow and leave that city for good.

For a less versatile man that would have been the end. But Mackintosh's creative life was not over. In his final phase he devoted himself to water-colour painting and in that medium produced works of such originality, power and distinction—four are reproduced in monochrome in the present volume—that they are by themselves sufficient to entitle him to a significant place amongst the artists of his time.

LIONEL B. BUDDEN [F]

**Simple Examples of Reinforced Concrete Design**, by *Oscar Faber*. 4th ed. 8½ in. x 90 pp. text diag. Oxford U.P. 1952. 9s. 6d.

A new and largely rewritten edition of a well-known, reliable and straightforward book for students and beginners in reinforced concrete design.

**Architectural Drawings in the Bodleian Library**. (*Bodleian Library, Oxford*.) (Bodleian picture books series, 7.) 8½ in. 7 pp. + 25 pls. Oxford. 1952. 2s. 6d.

This admirably produced booklet contains a selection of examples of English architectural draughtsmanship from the Bodleian Library. It serves as a valuable reminder that Oxford's collections of important architectural drawings are not confined to Worcester, All Souls, and the Ashmolean Museum. The period represented is from the 16th to the early 19th centuries.

**Survey of London**. Vol. xxiv: *King's Cross neighbourhood*. (The Parish of St. Pancras, pt. iv.) *Walter H. Godfrey and W. McB. Marcham*. London *Survey Committee and L.C.C.* 11½ in. x 9 in. xxiii + 185 pp. + 96 pls. + folding map in pocket. text illus. Lond.: L.C.C. 1952. £1 15s.

The previous St. Pancras volumes dealt with Highgate village, Old St. Pancras and Kentish Town, and the Tottenham Court Road district; this final volume gathers up the remaining historic areas, including a number of minor churches, of the borough, concentrating on the north Bloomsbury and King's Cross districts. The most permanently useful feature, probably, is the fine posthumous record of the Foundling Hospital; the two bombed churches of

Regent Square—St. Peter and the Presbyterian (ex-Scotch)—are studied almost for the first time; the fate of (at least) the latter, with its north front's half-size imitation of York Minster, is still in the balance. King's Cross and even St. Pancras stations (showing how recent is the Survey's coverage) are noticed and illustrated.

H. V. M. R.

**Town and Country Planning**, by A. J. Brown and H. M. Sherrard. 9½ in. xxvii + 382 pp. + (72) pls. and pp. of illus. text illus. Melbourne: University Press. 1951 [1952]. £3 3s.

The importance of this work as the only comprehensive textbook available for students of planning in Australia is indisputable. Indeed, not since 1921, when Sir John Sulman published his *Town Planning in Australia*, has any worthy treatise been produced for students of the Antipodes. It is equally true that Australia has contributed very little in a practical way to the development of the art of planning. Its principal cities were founded at the end of the 18th and the first half of the 19th centuries, and since then have spread outwards upon a grid pattern without control and with little regard for the welfare of the community. The result, inevitably, is that the authors have chosen to analyse the contributions to planning of the United States and Great Britain in order to discover a panacea for their own particular Commonwealth. The fact that the people of Australia have their roots in Europe is perhaps a justification, but geographically and climatically Australia and England are, if not worlds apart, at least on opposite sides.

In this work, history, zoning, transport, housing, open spaces, public utilities, neighbourhood planning, new towns and garden cities are all considered, and in each case the problems in Australia are assessed by standards of practice in America and Europe. The historical review is the least valuable. One cannot compress the gamut of history into twenty pages. Six of these pages are, however, devoted to the history of Australian planning, and these are valuable to the student in Britain as well as in Australia.

This book is essential reading for the student of planning in Australia today; it ought also to be essential reading for those in office who will frame her legislation for tomorrow.

CECIL STEWART [F]

**Dictionary of Architecture**, by Henry H. Saylor. 6½ in. xii + 190 pp. + 16 pls. New York: John Wiley; Lond.: Chapman & Hall. [1952.] £1 16s.

Henry Saylor will be known to many members of the Institute as the editor of the *Journal of the A.I.A.* He has spent most of his life in architectural journalism, being at one time Associate Editor of *ARCHITECTURAL FORUM*, but has also found opportunities to carry on a practice of his own, to work for Albert Kahn on industrial building during the last war and to be the author of several books, the most recent of which is this *Dictionary of*

*Architecture*. He believes that, with the rapid development of building techniques and materials nowadays, a small and up-to-date handbook of current architectural terms is more useful for normal professional purposes than an exhaustive encyclopaedia, which would take years to compile and might become out-of-date before it appeared in print. His aim has therefore been to provide concise definitions of those words with which an architect may reasonably be expected to be familiar, without straying into the particular technical vocabularies of other sciences and arts, of which he should no doubt have some general knowledge, but in which he need not be an expert. A few illustrations have been included, but these are confined to sketches of objects that defy lucid verbal analysis. Modest in scope and intention, this little dictionary should prove useful.

J. C. P.

**Adhesives for Wood**, by R. A. G. Knight. 8½ in. xi + 242 pp. + 6 pls. text diags. Chapman & Hall. 1952. £1 5s.

The third volume of a series of monographs on metallic and other materials, published under the authority of the Royal Aeronautical Society, this book is intended both as a work of reference on glues for the experienced and as a textbook for the apprentice. The author holds a senior post at the Forest Products Research Laboratory and is a recognised authority on the subject.

**Danske arkitekturstrømninger 1850-1950**. En arkitekturhistorisk undersøgelse, by Knud Millech. Kay Fisker, ed. 12½ in. [363] 365 pp. text illus. Copenhagen: Østifternes Kreditforening. 1951.

This is an anthology of Danish architecture of the past 100 years in which Archivist Knud Millech and Professor Kay Fisker, both of the Royal Danish Academy's School of Architecture, give their fellow architects the benefit of a lifetime study. To any who believe that modern Scandinavian architecture was invented by Asplund for the 1930 Stockholm Exhibition only to relapse into 'the new empiricism', this book brings salutary evidence that in Denmark at least empirical development of architectural forms is far from new; that this part of Scandinavia has a long experience of filtering the great international fashions through its own fine mesh, and that individual architects have done comparatively little inventing. The mesh consists of an interwoven relation between folk, landscape and climate, and is applied by the capital, Copenhagen, which through its absolute cultural domination has an unquestioned right to define the architectural habits of the day for the whole country. Copenhagen's own culture is urban, but it has never been foreign to that of the rural hinterland. This is partly because poverty has usually decreed simple architectural forms both for city and village, but also because of a certain fundamental liking for huddled comfort which transcends the urban-rural distinction and makes the city scene of any period hauntingly like that of the smallest country

cottage in its rural setting. Perhaps city and village have unconsciously influenced each other. In any case they exist side by side in a well-adjusted cultural relation.

The late arrival of the industrial revolution enabled this relation to escape most of the maladjustments it suffered in other countries during the period which this book discusses. One result was that the architect who emerged from the Renaissance period as the man in charge of building never lost this position and it was to him the industrialist turned when, late in the 19th century, factories and railway stations arrived as new building types. The role of tailor and clothier of other men's buildings was never his in Denmark and it is characteristic of the whole period that its two most significant architects, Bindesbøll and Nyrop, came from craftsmen families, left school early because of lack of diligence with letters and remained all their lives unaffected by the academic discussions of style with which, over their heads, all Europe raged. Incidentally, it now becomes clear that Östberg's Stockholm town hall is only a younger brother of Nyrop's in Copenhagen. Similarly Nyrop was not without connection with Norman Shaw.

The many copies of Östberg's work which appeared in England during the 1930s may even have suffered from making the disciple rather than the master the object of reverence, for, as this book makes clear, Nyrop's assimilation of classic and romantic elements into the design of his Copenhagen town hall, together with his sense for the colour and texture variations obtainable from traditional bricks and stone, was the really important 19th-century contribution to the 20th-century Scandinavian ideal.

Throughout this book the contrast between national and international influences is constantly emphasised, perhaps more than it needs to be. The trend everywhere in Europe towards national architecture during the 19th century was itself international; as much so as the development of iron frames, glass roofs and the rest of those structural techniques which form the main roots of the 20th-century international style. A picture takes form of a half-submerged European cultural movement in which nationally filtered international influences have been exchanged across the North Sea and the Kattegat more freely than we commonly acknowledge.

Interesting examples from the earlier part of the machine age show how well the traditional and the new techniques were combined. Beautiful surfaces of brick and stone, as lively as those of Nyrop's town hall, lead up to sweeping roofs covered with glass. Electricity generators, rails, or whatever plant occupies the floor seem to have been well considered as architecture and there is less clutter than in British practice of the same date. These brave new monuments to technical progress were respected as such, received and retained a dignified civic setting; and the only cause for regret is that the best of them, the central railway

station in Copenhagen, was on the wrong site and had to be demolished.

An important development of the same period was the city flatted block. Again development is empirical, with a certain subordinate cyclic movement as styles on the elevation change from vernacular to classic, to baroque, to *art nouveau*. At least one block appears which might have been by C. R. Mackintosh and then we are into the familiar scene of today, where the pattern of windows and balconies becomes itself a style. But materials and scale remain constant, even when wide spans betray the hidden presence of concrete, until we reach the Bellahøj towers with their concrete rims round slabbed façades and a caption tells us that 'standard concrete elements' are used. Even then there are qualities, hard to define, unmistakably Danish.

In all the modern work the outstanding quality is neatness. Façades are as orderly as a well-set dinner-table, however complex may be the pattern of projections, of solids and of voids. Such things as rain-water pipes, chimney-sweep's rungs, roof vents and (in the *entourage*) lamp-posts, paving, playground equipment and bicycle stands, all fit perfectly into place. Soil-pipes have never appeared.

How much the development of landscape architecture and the art of layout have contributed to the success of the modern Danish scene is well established; but references to the villa gardens of Klampenborg and other Copenhagen suburbs show how this part of the Danish achievement shares its origin with the great Edwardian period of house-and-garden creation in England.

Although our schools of architecture have to some extent abandoned the derivative aspects of historical study, one cannot help wishing that two scholars of our own, as erudite as Millett and Fisker, could be encouraged to collaborate on a similar anthology which might show us, a little more clearly than most of us know, how modern English architecture has developed.

F. R. STEVENSON [4]

**Plan for the National Capital of Canada.** General report submitted to the National Capital Planning Committee, by *National Capital Planning Service*, Ottawa, Jacques Gréber and others, consultants. 12½ in. × 10 in. vi + 308 pp. incl. pls. + front. + xxxi pls. Atlas annexed &c. ob. 21½ in. × 17 in. (i) p. + 20 pls. Ottawa. 1950.

The Canadian Government has issued a general report on the plan which has been prepared for the national capital, and it is heartening to learn that Canada has been considering in some detail the replanning of her larger towns. Unlike Britain, which has needed the destruction due to a great war to provoke a widespread interest in these matters, Canada has initiated this study in order to forestall planning chaos due to rapid increase in population and in some measure to repair damage already done.

This report consists of two volumes, the content of which represents a considerable amount of research and the compilation of accumulated data in the form of graphs,

diagrams, plans, and innumerable excellent photographs. In these volumes are also included several proposals put forward by M. Jacques Gréber, who apparently has been especially invited from France to undertake the work. The reproductions of his plans and sketches, and the photographs of his model of the city, are somewhat of a disappointment, however. There appears to be an absence of reality concerning the age in which we live, for it surely must be admitted that the 'beaux-arts' approach to town planning is now outdated and most unsuitable where long-term planning is envisaged. One is left wondering why the New World is looking backwards instead of forwards.

Monumental avenues, classical vistas, and symmetrical buildings are all to be found—almost in profusion—but the greatest danger lies in relation to the problems of traffic. Here the monumental beaux-arts approach would seem to cast a blight upon the easy flow of traffic—when main avenues lead into or even through the proposed 'pompous palaces,' instead of away from them to avoid congestion. In Ottawa, where the present arrangement of railways happily permits newcomers to find themselves immediately in the centre of the city, it seems somewhat odd to place the proposed Union Station some five miles out in the (as yet unbuilt-upon) suburbs!

In the section dedicated to open spaces there is a series of photographs showing an abundance of magnificent trees. Indeed the entire book shows Ottawa as a city fortunate in its natural surroundings, and it is intended to preserve this natural amenity and even to add to it by opening up the congested central areas. Let us hope that circumstances permit the carrying out of this admirable aspect of the plan—creating green spaces in a large city which can so easily become inhumanly covered with masonry.

A great amount of time and effort has been spent in the collection and tabulation of statistical data covering every relevant activity, within and around the city. All this information should prove a most valuable starting-point, but the next step demands both vision and courage. It may be that Ottawa, like so many cities in England, may have to think again about their town plans. In Ottawa's case this could be an advantage.

ENRICO DE PIERRO [4]

**Building Construction Illustrated**, by *Denzil Nield*. 10 in. × 7½ in. xii + 148 pp. incl. 175 line diags. Spon. 1952. £1 1s.

One is left in no doubt as to the purpose of this book. Students of surveying, engineering and architecture are presented with an overall picture of building construction, a subject prone to be divided into its specialist parts at the slightest provocation. The author obviously knows his subject well, both from traditional and contemporary points of view. The book therefore brings up to date a subject which has tended to change, in its character and approach, more rapidly than before. The

line diagrams are excellent. There is a foreword by T. E. Scott.

The task of condensing so broad a subject into so small a volume appears at first sight quite impossible, but Denzil Nield has accomplished such a task. How desirable it may be to do this, however, is an entirely different matter. The severe limitation of size has meant that the text is written in a commonplace factual manner to cover the immense ground of the subject. This also means that the reading is condensed, and much has been left to the imagination. To the student this may present considerable difficulty, unless he is fortunate in possessing some background knowledge, for building construction is full of terms which in themselves are confusing and defy logical definition.

The format of the book is familiar. It follows closely those of its predecessors over the last half a century, in so far as it deals in some detail with the 'elements' of building construction: walls, roofs, floors, etc. The emphasis is laid on 'how' such elements are constructed, and one is disappointed that more time and space has not been devoted to their functions and 'why' such construction is necessary. About one-third of the book deals with matters normally associated with specialists. Services are covered, and an excellent and much-needed chapter on electric wiring is included. One chapter is devoted to steel-framed and concrete buildings, and yet another deals with alterations and repairs.

Building bye-laws, British Standard Specifications and Codes of Practice are all mentioned, but only mentioned. Their place in the general picture is now so important that much of the building industry's future directly depends upon them. To familiarise the student with their existence is the duty of all writers of textbooks.

A bibliography or reference to published information should be added when reprinting is necessary, for when a subject is condensed to such an extent, a student has the right to expect to know the sources of further knowledge. Without this information, the book fails to some extent in its avowed purpose.

HENRY ELDER [F]

**The Smaller English House 1500-1939**, by *Reginald Turnor*. 9½ in. viii + 216 pp. incl. pls. — front. Batsford. 1952. £2 2s.

Here is a book presented with the invariable discretion of a Batsford production. The illustrations are more than adequate for the general reader, and Mr. Reginald Turnor's text is both scholarly and clear. One wonders merely, as so often before with this kind of book, to whom it is really addressed. It falls a good way short of advanced criticism; at the same time its technical analysis, particularly of constructional methods, would seem to be beyond the range of the ordinary reader's interest.

It is perhaps needless to say that it is rather a sad book, whenever the author permits himself to indulge in generalities, and is tinged with the nostalgia with which it is usual, if not fashionable, to dwell on the receding vista of an orderly and pic-



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uresque past. By the time the Victorian  
era was well under way, 'taste', Mr.  
Turner tells us, 'both basic and intellectual,  
suffered an irretrievable set-back'. 'Building  
was first a craft, then an art, next a matter  
of scholarship, and finally in our day a  
science.' Again: 'The Victorians . . .  
rejected romance and abandoned aesthetic  
judgement in favour of religion and moral  
precepts' . . .  
Surely the black-and-white houses of  
Chester were only engineering of a sort;  
and were the great Gothic builders so  
indifferent to moral precepts? I am in-  
creasingly inclined to dispute the validity  
and inference of Mr. Turner's kind of  
judgements. It is surely time to readjust  
our habitual attitude of regret for the  
waning of Renaissance influence. The  
structure of society has changed for ever,  
and not in my submission for the worse.  
Periods of tradition are necessarily  
periods of 'taste', since they are dominated  
by an aristocratic *élite* whose preservation  
demands at least an outward conformity  
to a prescribed and exclusive code of  
manners and appearances. In the 16th,  
17th, and 18th centuries the word 'beauty'  
was scarcely ever mentioned, and its very  
concept was an irrelevance. Suitability,  
elegance, refinement—indeed 'Commodity  
and Delight'—these were the fundamentals  
of social approval. In fact, tradition and  
taste are as much spiritual blinkers as they  
are reliable guides to conventional aesthetic  
preference.

When, however, the Palladian tradition  
broke down, then the rising middle class  
successors to aristocratic exclusiveness  
reasserted a demand for beauty, if only a  
confused and errant one. The 'battle of the  
styles' was neither more nor less than an  
attempt to recapture a forgotten innocence;  
and many of the manifestations of the 19th  
century achieved a percipient beauty un-  
paralleled since the full flowering of  
Venetian painting. It is worth noting, for  
instance, the kind of *art nouveau* pottery in  
a still life by Manet. What sort of 'taste',  
in the traditional 18th-century sense, may  
it be supposed was exercised in their  
domestic environment by most of the great  
artists, musicians, writers, and persons of  
sensitivity, whose imagination opened  
magic casements to a new and thrilling  
experience, and whose output of authentic  
works of art throughout the 19th century  
equals, even if it does not eclipse, the total  
production of the previous 300 years?  
And because architecture alone remains,  
as it is wont to do, an art of conformity  
although Mr. Goodhart-Rendel finds some  
19th-century examples, not without reason,  
'perfect'; and although so much Victorian  
architecture reflected the stuffy social  
morality of the period (in contrast to the  
other fine arts which attempted to defy it),  
it seems to me wilfully prejudiced to deny  
all its claims to beauty, whether of con-  
ception or, sometimes, of execution, or  
to refuse to recognise its liberating in-  
fluence on the aesthetic freedom of today.  
Indeed, it would seem that, for the first  
time since the building of the cathedrals,  
contemporary architecture is free to dis-

cover its own scope and limitations,  
undeterred by traditional inhibitions.

Mr. Turner is not unduly pessimistic  
about the future. Yet he insists that the  
art of architecture is not the product of any  
particular kind of social organisation, but  
is dependent for its expression on style.  
Admittedly it is nonsense to require archi-  
tecture or anything else to interpret, say,  
democracy, or egalitarianism, or any other  
abstraction. But it cannot fail in the event  
to be the product of its age, made manifest  
in retrospect. The hope and business of  
everybody is to live as fully and comfortably  
as possible; and to that extent building  
must fulfil an eminently practical function  
before attempting to add spontaneous  
decoration as a gesture of satisfaction and  
grace. Yet the time will come again  
assuredly when those satisfactions and  
graces will have consolidated into an  
accepted way of life. Thereafter a new  
tradition will arise, and thence a style—  
and the quality of beauty will go out at the  
back door through which it came! . . .

This comprehensive guide to the small  
urban and country house is a pleasant  
enough book. Architecture has always  
defied adequate definition, and will no  
doubt for long continue to do so. In the  
meanwhile, it may be hoped that Messrs.  
Batsford will continue to find authors to  
spin a thread on which to hang their  
admirable collections of plates.

ROBERT LUTYENS [F]

**Acoustics in Modern Building Practice**, by  
*Fritz Ingerslev* [Trans. by the author].  
8½ in. x + 290 pp. text illus. Architectural  
Press. 1952. £1 15s.

At first glance this is one of those books  
written for architects by physicists that fill  
us with despair. There are the dreadful new  
terms like *transmittivity*; there are the  
graphs with their maddening scales like the  
new 'equal annoyance contours'; the  
decimal notation of the figs. (a veritable  
spreading fig. tree); the odd little plans;  
the photograph of the pistol that makes the  
noise; the ritual photograph of the Bark-  
hausen instrument. But these are the  
defects of its virtues. This book shows us the  
first-rate laboratory mind stepping out of  
the cloister, doing field tests, reacting  
personally to noise and music, learning  
what happens on the job, writing specifica-  
tions and building studios; yet also  
adhering to the scientist's training in exact  
statement, and still cherishing a peculiar  
passion for photographing bits of apparatus.  
All this is encouraging.

The difficult subject of building acoustics  
tends to fall into two: there is the epistemo-  
logical side which leads an elegant mathe-  
matical life in the pages of the *JOURNAL OF*  
THE ACOUSTICAL SOCIETY OF AMERICA and  
elsewhere; and the empirical, or rule of  
thumb, side, which accumulates the kind  
of knowledge that can be used for spec-  
ifying and building. There are a few highly  
trained scientists who insist on keeping  
hold of both sides and Dr. Ingerslev is one  
of them. On reading carefully we find some  
injunctions and warnings now put positively.  
Thus, 'If a defect is caused directly by the

unsuitable shape of a room, it will be very  
expensive, if not impossible, to remove the  
defect later on (by means of sound ab-  
sorbents)'. In old days this would have  
been couched much more cautiously as  
follows: 'Normally, it is very doubtful  
whether, other factors being equal, we can  
look for satisfactory remedial measures in  
a room having a relatively defective shape'.  
Another positive statement in this book is  
'a concave rear wall is very dangerous  
because the reflected sound wave may be  
concentrated in a small part of the room  
and cause echoes'. A clear warning is also  
given against curved ceilings struck from  
near floor level, and in Figs. 12.6 and 12.7  
a photometric comparison is shown as  
between concentrations at floor level given  
by this type of curved ceiling, and by a flat  
ceiling. In the curved case the strong  
focusing down the long axis is clearly  
shown, and in the flat case an even distribu-  
tion. The author might have added that  
halls not carpeted, and usually with a bare  
centre gangway (where the focusing oc-  
curs), such as school halls, assembly hall,  
churches, are specially vulnerable to this  
kind of ceiling shape, and hence the new  
types of 'shell concrete' vaults are likely to  
cause trouble if used for auditories. It is a  
pity Dr. Ingerslev perpetuates the term  
barrel vault for all kinds of curved ceiling:  
the 'barrel' has always hitherto been the  
semicircle, and for the flatter curves of  
varying radius the term 'segmental' is  
appropriate. These older terms clearly dis-  
tinguish two opposed categories whether in  
aesthetics, in building construction, or in  
acoustics and are therefore more scientific.

The author's treatment of designing from  
reflection, including his sections on sound  
distribution and diffusion and on methods  
for checking room design, is admirable  
and refers to practical experience at a great  
many points. Especially good is the con-  
cluding paragraph of section 17: 'there has  
been a tendency', he says, 'to regard the  
control of reverberation time by use of  
sound-absorbing materials as the most im-  
portant question in connection with room  
acoustics. This is to overrate the importance  
of sound-absorbing materials. On the  
contrary, the situation is that a well-  
designed large room, with seats having an  
absorption approximately equal to the  
absorption of a person, will need little, if  
any, additional absorbing materials.  
Usually the main problem in a concert hall  
is to keep a sufficiently high reverberation  
time and in such cases absorbing materials  
should be used only if they are essential for  
the prevention of echoes.'

The section on Sound Absorbents gives  
an analysis, from the scientific side, of  
porous materials, of non-perforated panel  
absorbers and of the Helmholtz resonator  
panel absorbers, and illustrates the new  
perforated cones. Practical comments are  
made, and coefficients given. The poor  
absorbing value at low and middle pitch  
of 'acoustic plasters' is noted. The advan-  
tage of distributing absorbents in a chess-  
board pattern on walls or ceiling is clearly  
shown in Fig. 20.18. The increase in  
absorption due to this distribution appears

to be as much as 10 per cent at middle pitch. A selected rather than a collected list of absorption coefficients for materials is given on pp. 155 and 156, and this list gives us the results of the Danish tests on perforated and slotted boards of which in Copenhagen they have made such admirable use; also on 'normal glazing'. This was found to be as much as 18% at middle pitch and the author comments on its importance. It was still given as 3% by Knudsen and Harris. Of course the stiffness and weight make a difference and our author gives the size of his 'normal pane'—125 cm. by 85 cm.—but not the weight of glass.

Under 'noise abatement' the difficult subject of open office planning, now so much in evidence, is touched upon. Noisy machines are multiplying, as we know, and are not being segregated either in factories or in offices. Instead they find themselves under the same ceiling as managers, interviewers, buyers on the telephone. The ceiling is often made sound-absorbing and rightly so, but there remains the direct sound from machine to persons in proximity. Hence arises the new technique of little enclosing screens, absorbing desk backs, telephoning hoods, absorbing pelmets, now being desperately resorted to. In other words, having planned to open out, the machine is driving us to a kind of makeshift enclosing again.

Two useful illustrations are given of Danish screening devices. Some admirable recommendations on planning against noise follow. The difficult notions which attempt to give an account of the mechanics of sound transmission are carefully presented for the sake of scientific readers. 'Calculations can only be made with the help of certain simplifying assumptions.' One of these is that the length and height of the wall are infinite. On the other hand, valuable empirical results are given by the Danish tests on large-scale building elements following ordinary specifications. Our author lays stress, for instance, on the value of plastering partitions which are slightly porous in order to seal them and prevent the considerable transmission due to porosity. And so an accumulation of facts about specific materials, thicknesses, edge fixings is built up, and our working knowledge of the very queer behaviour of doors, windows, floors, walls, in the presence of our neighbour's wireless set, is most usefully enlarged by this book. When we realise that it is a translation by the Danish author himself, with the help of Mr. B. Cadd, into good English, that a conversion table for English and metric units is given and a good index, we realise how grateful we should be—in the present dearth of good textbooks—to author and to publisher.

HOPE BAGENAL [F]

**School Buildings 1945–1951**, by Bruce Martin. 9½ in. 128 pp. incl. pp. of illus. text illus. Crosby Lockwood. 1952. £1 5s. The overall scheme of this book is to give an outline of the educational system, of what a school building means to all connected with it and of the development of

various structural systems which have been used in the period. Illustrations are included of 22 schools (four pages to each school), so that the plans and structural system can be compared easily, and glimpses can be obtained of the appearance and feeling of the various buildings.

The theme throughout—mainly a structural one—is suggested rather than explicit, and the reader is expected to arrive at his own conclusions from a study of the various examples. It follows, therefore, that the object of the book is not to assemble models for imitation or even inspiration, but to develop a thesis in pictures rather than words. Indeed many of the buildings would not be suitable as models, since they are designed to standards which are not now permitted in this country, or are foreign examples with requirements inferior to our own. Most of the schools are in the primary range, whereas the emphasis in building in this country is now on the secondary school, but the factor of obsolescence does not matter as long as the book's purpose is kept in mind.

The current tightening up of the school plan, until it nearly resembles Victorian practice, is not illustrated in its most extreme manifestations, and I am sorry to say that the 'humanities' are touched on only incidentally; some of the schools being sadly deficient in this respect, including several of the foreign examples. The development of the structure in two almost incompatible respects is the author's main concern. The traditional brick wall, giving support, a measure of insulation and weather resistance, and a pleasing skin externally, tends to be replaced by systems in which support is provided by stanchions, insulation and a weather resisting skin by separate membranes or screens.

It would appear that many of these proposals involve a number of separate trades, some foreign to the building industry and all tending to lead to mutual interference and delay. In examining the examples conceived on this basis, one is struck by their structural complication and I wonder whether, if equal thought and ingenuity were expended on the study and improvements of traditional methods of construction, it would not have produced a simpler, less expensive, equally efficient and in many cases more pleasing result.

It is the value of the book that it provokes questions such as this and provides some of the data for resolving them. The brief introduction and concluding discussions are well written, and avoid conveying the impression, so often given by writers on school design, that nothing of value was produced before they started to practise or by authorities other than those with which they are associated.

HOWARD V. LOBB [F]

**Monumental Brasses, etc.**, by Herbert W. Macklin. 7th ed. By Charles Oman. 7½ in. 196 pp. incl. pls. text illus. Geo. Allen & Unwin. 1953. 12s. 6d.

Macklin's handbook, which first appeared half a century ago, is still regarded as the best introduction to the subject and its

reappearance is welcome. In the new edition the text remains unaltered, but a preface with critical comments, a revised bibliography and a list of war casualties among brasses have been provided by the editor, Charles Oman, Keeper of the Department of Metalwork at the Victoria and Albert Museum.

**Safer Buildings for Bulls**, by R. J. Forsyth. West of Scotland Agricultural College. Bulletin No. 148. 8½ in. 25 pp. incl. (10) pls. text illus. Glasgow. 1952. 2s.

The architect-author, who is head of the Farm Buildings Department of the West of Scotland Agricultural College, has compiled a booklet that should be of great value to all concerned with the design of buildings for farm stock. Illustrations include layout plans and photos.

**Cuzco**. Reconstruction of the town and restoration of its monuments. Report, &c., by George Kubler. (UNESCO Museums and monuments series, iii.) 12½ in. × 9½ in. 39 pp. + (17) pls. [Paris; Lond.: H.M.S.O. 1953.] 8s. 6d.

At the request of the Peruvian government, a technical mission was sent by UNESCO in June 1951 to examine and assess the damage caused by the disastrous earthquake of 21 May 1950. Here is their report. It contains a detailed survey and a draft plan for the restoration of the Inca and Colonial city, and the creation of a modern urban community, for which no adequate framework exists at present. It is an inspiring document that does honour to the mission and their sponsors.

**The Preservation of Buildings of Historic Interest**. Council for British Archaeology. 7½ in. (12) pp. 1953. 6d.

This immensely valuable leaflet explains very simply the powers contained in the Town and Country Planning Act, 1947. It also gives advice on the action which may be taken to save a threatened building.

**Building Construction**, by W. B. McKay. Vol. i. 3rd ed. ob. 8½ in. × 11½ in. viii + 168 pp. incl. pls. text illus. Longmans, Green. 1953. 12s. 6d.

The new edition of this familiar and practical book, intended for students in the early stages of their studies, has undergone few important changes. The many reprints of the earlier editions are proof of its popularity.

**Forces in Framed Structures**, by T. Lyle Morgan. 8½ in. viii + 215 pp. text diag. Spon. 1952. £1 5s.

An experienced teacher and lecturer, Mr. Morgan believes that the 'theory of structures' can no longer be presented in a single textbook, and has confined the scope of this volume to the analysis of the forces in the members of statically determinate frames. Worked examples and test papers are important features, and the requirements of the architectural student have been particularly considered.

# Review of Construction and Materials

This section gives technical and general information. The following bodies deal with specialised branches of research and will willingly answer inquiries.

The Director, The Building Research Station, Garston, near Watford, Herts.

Telephone: Garston 2246.

The Officer-in-charge, The Building Research Station Scottish Laboratory, Thorntonhall, near Glasgow.

Telephone: Busby 1171.

The Director, The Forest Products Research Laboratory, Princes Risborough, Bucks.

Telephone: Princes Risborough 101.

The Director, The British Standards Institution, 28 Victoria Street, Westminster, S.W.1.

Telephone: Abbey 3333.

The Director, The Building Centre, 26 Store Street, Tottenham Court Road, London, W.C.1.

Telephone: Museum 5400 (10 lines).

The Director, The Scottish Building Centre, 425-7 Sauchiehall Street, Glasgow, C.2.

Telephone: Douglas 0372.

**Colour in School Buildings.** The Ministry of Education have issued their *Building Bulletin No. 9, Colour in School Buildings*, which discusses the use of colour in school buildings and describes a new colour range to which the name Archrome (Munsell) Range has been given, but it is emphasised that it is not a Ministry of Education range and that there is no question of the Ministry specifying its use in schools; any local authority or private firm of architects will be free to use the range or not as they think fit. The Bulletin states that the range came into being to satisfy the requirements of some architects designing schools and, since it has proved of use, it is being published now as a contribution to the common pool of experience.

Until recent years that pool has reflected an "arbitrary accumulation of colours" which do not always offer a balanced selection; creams, buffs, straws, stones, with but slight differences between them, a large number of greens, a few reds and blues, and a lack of good clear hues of neutrals and near neutrals.

The authors of the Bulletin say that because most existing colour ranges are not well balanced the architect often finds that the colours he needs are not included in any one manufacturer's card or on the British Standard cards and so he is driven to order 'special' colours. It therefore seemed reasonable to bring together in one range the colours architects frequently wish to use but which do not appear on existing cards or else are scattered over several.

The Archrome range thus evolved contains 47 colours which are shown by small coloured 'chips' arranged on a chart divided into vertical and horizontal columns so that the hues read horizontally and colours of equal value (and therefore having approximately the same reflection factor) appear in the same vertical columns. Under each chip is printed the Archrome reference number (1-47) and the Munsell notation. It will be recalled that a description of the Munsell system of colour notation appeared in the May 1952 JOURNAL.

In a short note such as this it is impossible to do justice to the views on the use of colour that are expressed in the Bulletin, or to the suggestions given of appropriate

applications for various parts of a school building; the Bulletin is largely a record of the results of a practical approach to the problem, and although such an account must inevitably remain an expression of a point of view the authors think that few will disagree with the two main points which the Bulletin seeks to make—the need for a methodical use of colour and the usefulness of a colour range specially designed for schools and other similar kinds of buildings.

The Bulletin and the colour range are the work of a small group of persons representing the Development Group of the Ministry of Education, architects of the London and Hertfordshire County Councils, and officers of the Building Research Station, assisted by representatives of the paint manufacturing industry. The Bulletin can be obtained from H.M.S.O., price 4s. net.

**Arcon Development Group.** The need for expansion of our export trade has been stressed and—so far as the building industry is concerned—not without success, for readers of the JOURNAL will recall references to timber houses for export. But other branches of the industry are playing their part, and among them are the Arcon Development Group, one member of the Group being Messrs. Taylor Woodrow (Building Exports) Ltd. Mr. A. M. Gear [A] and Mr. Rodney Thomas [A] are the consulting architects.

The Group specialise in the design of complete structures suitable for various purposes abroad especially tropical countries, and one of these is a storage building which can be easily and rapidly erected without any demands being made on the use of local materials, all components and covering being supplied in easily-handled units.

The basic unit is a bay with a longitudinal dimension of 16 ft. 8 in., with alternative spans of 33 ft. 4 in. and 50 ft. There are three column heights of 10 ft. 6 in., 14 ft. 6 in. and 20 ft. 6 in. to eaves. Any number of bays may be added to each other, either end to end or side by side, thus allowing flexibility in planning. The components are made of mild steel sections for the columns and sheeting rails; welded m.s.



The Arcon Development Group storage building framework

tube for the trusses and eaves extensions; m.s. drawn tube for the purlins, gable sheeting rails and anti-sag ties, and m.s. rod for the wind braces. Sheeting for walls and roofs can be either corrugated asbestos cement, aluminium or galvanised iron, according to choice.

As will be seen from the accompanying illustration the design of the roof trusses allows a ceiling to be slung from the lower members and this provides an air space under the external covering which should go far towards providing comfortable conditions in hot countries.

Other structures designed by the Group include a saw-tooth roof building, a three-pin frame and roof, a demountable building, and a panel construction house.

## Fire Resistance of Prestressed Concrete.

In collaboration with the Building Research Station, the Fire Research Station have been studying the behaviour of prestressed concrete during and after fires, particularly in the case of post-tensioned beams of rectangular or I section. Investigations are continuing but advance information on the general trend of the results so far obtained has been given. The tentative conclusions arrived at are as follows:

1. Time to collapse is largely determined by the rate of rise of temperature of the cable. 2½ in. concrete cover will give a fire resistance of 2 hours. Thicker cover will lengthen the time, but if it is more than about 3 in. thick it may be desirable to include some light reinforcement, such as steel mesh, as a precaution against spalling.
2. For a fire resistance of 4 hours or more an insulating encasement is probably required. With adequate key, normal plastering with gypsum or cement/lime/sand may give up to ½ hour additional resistance, and 1 in. thick protection incorporating vermiculite should give an increase of about 2 hours.
3. When longitudinal expansion of beams is prevented they may fail earlier than they would if free to expand, and the effectiveness of the restraint seems to be a determining factor.
4. There is little difference in performance between a beam of rectangular and one of I section if each has the same load-carrying



capacity and the same concrete cover to the cable.

5. Explosive spalling does not seem likely to occur in beams having no part less than about 2 in. total thickness.

6. Failure is unlikely to be sudden. There is a progressive sagging which in beams of large span would be most noticeable. The formation and visible extension of cracks with a marked increase in deflection are signs that collapse is imminent.

7. Beams that have been exposed to a fire of shorter duration than that which would cause failure, representing, say, less than half of their fire resistance, are likely to retain a high percentage of their original strength on cooling but with a marked residual deflection and loss of prestress.

**Portable Fire Extinguishers.** The Fire Protection Association, of 84 Queen Street, London, E.C.4, have published their technical booklet No. 6, *Portable Fire Extinguishing Appliances*; it contains a list of appliances tested and approved by the Fire Offices' Committee. After notes on extinguishing agents for fires involving ordinary combustible materials, flammable liquids, and where electric wiring and apparatus are concerned, the booklet deals with the installation, care and maintenance of appliances and then gives the name of various extinguishers with the name and address of the manufacturer or proprietor; 182 of the soda acid type, 42 of the water (gas-expelled type), 102 of the foam type, 68 of the special liquid type, 3 dry powder type, 6 carbon dioxide type, and one portable pump.

#### More Catalogia

**Messrs. Hall Harding Ltd.** Those who find interest in the personal account of the growth of a large organisation from small beginnings should read *One Hundred Years of Family Enterprise*, a very well produced booklet which recounts the early beginnings of the firm of Hall Harding Ltd., who supply almost everything an architect wants for putting his ideas on paper and having them reproduced. How different from the time when duplicate drawings had to be drawn afresh. The word Alliance, now the trade mark of the firm, first appears in reference to a roll of tracing cloth in the stock list of Edward Ruff, a map and paper mounter, whose business was bought by S. and C. Harding in January 1866. Messrs. Harding amalgamated with B. J. Hall & Co. Ltd. in 1943.

Since 1949 the firm have presented 49 gold watches to those who have served in the business for 30 years or more, a fact which speaks well for the good relations that exist within the firm.

**Messrs. James Austin & Sons (Dewsbury) Ltd.** Another and equally attractive booklet records 100 years of progress, from 1850 to 1950, made by James Austin and his successors. James Austin was a whitesmith, or millwright, and when he was taking his particular part in the development of the 'shoddy' trade at Dewsbury, he little thought that in later years his firm would be engaged in making Bailey bridges and steel-framed buildings.

**Messrs. Wheatly & Company Ltd.,** of Springfield Tileries, Trent Vale, Stoke-on-Trent, manufacture Triton quarry tiles and have produced a booklet briefly describing how red, brown, buff and blue quarries are made. It should interest those who like to know something about the materials and processes that produce these components which figure in so many specifications. The production, particularly the photography, is extremely well done.

**The Copper Development Association.** The Association have issued four publications of historical and specific interest. The historical book, *Copper through the ages*, gives a brief account of some of the past and present uses of copper and its alloys, stating that copper was one of the first metals to be used by man; indeed, in the Middle East traces of copper workings have been found which date possibly as far back as 5000 B.C. Students of etymology will be interested to learn that the term campanile for a bell tower derives from the fact that Roman bells were cast from Campanian brass.

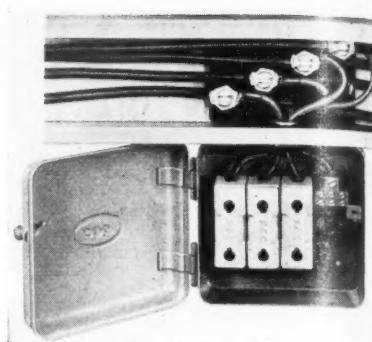
*Copper underground; its resistance to soil corrosion*, as its title indicates, deals with copper pipes laid underground and their resistance to corrosion in the great majority of soils; a claim which is supported by the condition of copper objects found in Mesopotamia below the level of the clay left by the Great Flood, which is believed to have occurred about 4000 B.C.

*Copper flashings and weatherings* is a practical handbook giving detailed information about damp-proof courses, flashings, roofs and their jointing. Clear detail drawings illustrate the short technical notes.

*Copper pipe-line services in building* describes and illustrates various connections and methods of making the joints and also devotes a chapter to pipe sizes, with tables and graphs whereby the bore of pipes to various fittings can be calculated, taking frictional losses into account. Other chapters deal with hot water supply, heating installations and 'plumbing' work to sanitary fittings.

These publications are notable for their excellent design and typographical lay-out. The address of the Copper Development Association is Kendals Hall, Radlett, Herts.

**Electric Cable Trunking.** In large blocks of offices and similar buildings where the location and need for electrical apparatus may alter in the course of time, the position of the conduit runs and distribution boards is not easy to decide in advance. The General Electric Company have simplified the problem by introducing their system of fused tapped cable trunking, which uses standard cable trunking, fused tap-off units and terminal bases. Where outlet points are required a hole is drilled in the trunking and a tap-off unit is secured to the trunking by a bush and locknut. Inside the trunking a terminal base is fitted having several slotted terminals mounted on a base of insulating material. The cables are bared



The G.E.C. fused tap-off unit

and laid and clamped in the slots. Circuit cables are then clamped to the terminals and are led to the top of the fuses in the tap-off box projecting from the trunking. As this assembly can be attached to the trunking at any time and at any convenient point there is economy in costs of installation combined with flexibility.

#### British Standards recently published

**B.S. 1972: 1953. Polythene tube for cold water services.** This Standard deals with black polythene tube for use in cold water services and in flush, overflow and warning pipe applications, and provides for two classes: normal gauge, suitable for connection by other than screw threading and heavy gauge for screw threading.

**B.S. 1973: 1953. Polythene tube for general purposes, including chemical and food industry uses.** This Standard provides for three colours of polythene tube, black, white and natural; these can be had in three grades distinguishable by the viscosity of the material.

In connection with the above two Standards it should be noted that polythene is degraded by sunlight, but the pigment in the black tubing prevents this, and this type should be used where exposure to sunlight is likely. Natural tube should not be used where it will be exposed to direct sunlight, nor in circumstances where it is undesirable for light to reach the material in the tube. Polythene tubing must not be used for hot water distribution as it softens with heat. It is less sound-conducting than metallic tubing.

Polythene is very resistant to inorganic chemicals, but is affected by a number of organic chemicals and therefore users should ascertain if it is satisfactory for the proposed application.

Those wanting further details of the material should apply to I.C.I., Plastics Division, Welwyn Garden City, Herts., for their booklet on 'Alkathene' tube.

**B.S. 1192: 1953. Drawing Office Practice for Architects and Builders.** A revision of the 1944 edition. In the pages showing symbols for materials in section the coloured chips have been omitted and for some materials the graphic symbols have been changed. The document can be obtained from the British Standards Institution, price 7s. 6d.

# Notes and Notices

## NOTICES

**Correspondence with the Institute.** In order to facilitate speedier attention to correspondence, and to relieve the staff of a great deal of research, it is particularly requested that members and Students will kindly state in all correspondence with the Institute the class of membership (F, A, L or Student) to which they belong.

**Forms of Agreement for Use between a Building Owner and an Architect.** Members are reminded that, on the recommendation of the Practice Committee, the Council have approved the publication of Forms of Agreement in the three following editions:—

- (i) *Form of Agreement for General Use between a Building Owner (including a Statutory Authority) and a Firm of Architects;*
- (ii) *Form of Agreement between a Local Authority and a Firm of Architects for Housing Work;*
- (iii) *Form of Agreement between a Local Authority and a Firm of Architects for Multi-Storey Flats.*

In addition, on the recommendation of the Competitions Committee, the Council have approved a *Form of Agreement between the Promoters and a Firm of Architects appointed as the result of a Competition.*

The respective Forms have been carefully designed to include all the essential points on which a clearly defined agreement between a Building Owner and an Architect is needed, and to omit many irrelevant and repetitive clauses which, in the experience of the Institute, are so frequently inserted.

The four documents are now available in printed form, and may be obtained on application to the Secretary, R.I.B.A., 66 Portland Place, London, W.1 (price 6d. per copy).

**Members and Professional Affixes.** The Council's attention has been called more than once to the practice, among some members, of adding a string of letters of doubtful value to the affix indicating membership of the Royal Institute on their letter paper.

This is a matter in which the Council obviously cannot dictate to members, and must trust to their good sense. It should be obvious, however, that the affix of a chartered body of high standing is weakened in effect by the addition to it of a string of other mysterious designations some of which probably indicate no more than the payment of an annual subscription.

### CURRENT R.I.B.A. PUBLICATIONS

The following is a list of the main R.I.B.A. publications with their prices.

#### Agreement, Forms of

Form of Agreement for General Use between a Building Owner (including a Statutory Authority) and a Firm of Architects.

Form of Agreement between a Local Authority and a Firm of Architects for Housing Work.

Form of Agreement between a Local Authority and a Firm of Architects for Multi-Storey Flats.

Form of Agreement between the Promoters and a Firm of Architects appointed as the Result of a Competition.

Price 6d. per form (inclusive of purchase tax). Postage 3d.

#### Architect and His Work, The

Price 6d. Postage 3d.

#### Certificates, Architects', Form Prepared by the Practice Committee

Copyright. Book of 100 Certificates.

Price 17s. (inclusive of purchase tax). Postage 1s. 2d.

#### Contract, Form of Agreement and Schedule of Conditions

For use with quantities: 1939 revised 1952. Copyright.

For use without quantities: 1939 revised 1952. Copyright.

Price 2s. 2d. per form (inclusive of purchase tax). Postage 3d.

Adapted for the use of Local Authorities, for use with quantities: 1939 revised 1952. Copyright.

Adapted for the use of Local Authorities, for use without quantities: 1939 revised 1952. Copyright.

Price 2s. 4½d. per form (inclusive of purchase tax). Postage 3d.

Fixed Fee Form of Prime Cost Contract for use in the repair of war-damaged property, 1946 revised 1950. Copyright.

Price 2s. 2d. (inclusive of purchase tax). Postage 3d.

Cost Plus Percentage Form of Prime Cost Contract for use in the repair of war-damaged property: 1946 revised 1950. Copyright.

Price 2s. 2d. (inclusive of purchase tax). Postage 3d.

#### Examination, Intermediate, Questions Set At

Price 1s. per examination. Postage 3d.

#### Examinations, Final and Special Final, Questions Set At

Price 1s. per examination. Postage 3d.

#### Forms of Articles of Pupilage

Copyright. Price 1s. 8d. (inclusive of purchase tax). Postage 3d.

#### Membership of the R.I.B.A.

Particulars of the Qualifications for Associate-ship

Price 2s. 6d. Postage 3d.

#### Party Wall Notice Forms, for Use Under the London Building Act

Form A—Party Structures.

Form B—Party Fence Walls.

Form C—Intention to Build within Ten Feet and at a lower level than the bottom of the foundations of adjoining Owner's Building.

Form D—Intention to build within Twenty Feet of the adjoining Owner's Independent Building and to a depth as defined in Section 50(1)(d).

Form E—Party Walls and Party Fence Walls on line of Junction of adjoining lands.

Form F—Walls or Fence Walls on Building Owner's land with footings and foundations projecting into adjoining Owner's land.

Form G—Selection of Third Surveyor.

Price 7d. per form (inclusive of purchase tax). Postage 3d.

#### Prizes and Studentships 1953-4.

Price 2s. 6d. Postage 3d.

#### Scale of Professional Charges

Price 3d. Postage 3d.

## COMPETITIONS

**Redevelopment of Marine Parade, Dover.** The Dover Corporation invites architects registered under the Architects' Registration Acts and resident in the United Kingdom to submit

designs in competition for dwelling accommodation on a site in Marine Parade, Dover. The site has an area of 6.5 acres, excluding portions of surrounding streets.

Assessor: Mr. Arthur W. Kenyon, C.B.E., M.T.P.I. [F].

Premiums: 1,000 gns., 500 gns., 250 gns., 150 gns., 75 gns., 50 gns.

Last day for submitting designs: 10 September 1953.

Conditions may be obtained on application to James A. Johnson, Esq., Town Clerk, New Bridge House, Dover.

Deposit: 2 gns.

#### Hospital at Doha, Persian Gulf

The Government of Qatar, Persian Gulf, invite architects registered under the Architects' Registration Acts to submit designs for a 100-bed hospital, complete with staff quarters, at Doha.

Assessor: Mr. Alexander S. Gray [F], of Messrs. W. H. Watkins, Gray & Partners.

Premiums: £1,250, £1,000, £750.

Last day for submitting designs: 15 August 1953.

Conditions may be obtained on application to: Captain J. E. Stone, C.B.E., M.C., F.S.A.A., Hon. Secretary and Treasurer, International Hospitals Federation, 10 Old Jewry, E.C.2.

Deposit: £3 3s.

Envelopes to be marked 'Doha Competition'.

#### Sheffield University

The University of Sheffield invite architects registered under the Architects' Registration Acts and resident in Great Britain, Northern Ireland or the Republic of Ireland to submit, in competition, designs for certain buildings to be erected on sites within the central area of the University, together with a layout and sketch elevations for other buildings also to be located within that area.

Assessors: Sir Percy Thomas, O.B.E., Past President, Mr. F. R. S. Yorke [F], and Mr. Gerard Young, J.P.

Premiums: £5,000, £3,000, £2,000.

Last day for submitting designs: 31 October 1953.

Conditions may be obtained on application to: The Secretary, Architectural Competition, The University, Sheffield. Deposit: £2.

**Dublin Port and Docks Board: New Head Office Building.** The Dublin Port and Docks Board invites designs in competition for a new Head Office Building. The competition is open to all qualified architects who are:

(a) Holders of the Degree of Architecture of the National University of Ireland.

(b) Members or Fellows of the R.I.A.I.

(c) Members of the R.I.B.A. (or allied societies) who are practising in Ireland.

Assessors: Mr. John M. Fairweather, Mr. Vincent Kelly [F], Mr. Alfred E. Jones.

Premiums: £700, £500, £200, £100.

Last day for submitting designs: 2 November 1953.

Conditions may be obtained on application to the Secretary, Dublin Port and Docks Board, Westmoreland Street, Dublin. Deposit: £3 3s.

## ALLIED SOCIETIES

### Changes of Officers and Addresses

**Berks, Bucks and Oxon Architectural Association.** President, David Booth [F]. Hon. Secretary, G. J. Beard [A]. **Berks Society of Architects:** Chairman, Ernest Lasseter [L]. Hon. Secretary, A. G. Armstrong [A]. **Buckinghamshire Society of Architects:** Chairman, A. B.

Waters [F]. *Oxfordshire Society of Architects*: Chairman, J. R. Tolson [F]. Hon. Secretary, E. R. Chilton [F].

*Bristol and Somerset Society of Architects*. President, J. Nelson Meredith [F]. Hon. Secretary, A. H. Down [A].

*East Anglian Society of Architects and Norfolk and Norwich Association of Architects*. President, R. O. Bond [F].

*Essex, Cambridge and Hertfordshire Society of Architects, Chelmsford and District Chapter*. Hon. Secretary, N. P. Astins [A].

*Gloucestershire Architectural Association*. President, P. S. Falconer [A].

*Leicestershire and Rutland Society of Architects*. President, Clement Copeland Ogden [F].

*Northamptonshire, Bedfordshire and Huntingdonshire Association of Architects*. President, K. A. Milner [L]. *Northants Branch*: Chairman, A. N. Wilson [F]. *Bedford Branch*: Chairman, J. A. Claydon [A]. *Huntingdonshire Branch*: Chairman, K. A. Milner [L].

*Nottingham, Derby and Lincoln Society of Architects*. President, F. H. Crossley [F]. Hon. Secretary, W. Caparne Baldry [L]. *Nottinghamshire Branch*: Chairman and Hon. Secretary, W. Caparne Baldry [L]. *Derbyshire Branch*: Chairman, E. H. Ashburner [F]. Hon. Secretary, G. I. Larkin [A]. *Lincoln Branch*: Chairman, S. F. Barrell [A]. Hon. Secretary, C. A. Parker [A]. *North Lincolnshire Branch*: Chairman, J. Fred Pye [L]. Joint Hon. Secretaries, H. T. Bower and L. A. Hendry [A].

*Oldham Society of Architects*. President, P. R. Turner [L], 11 Clegg Street, Oldham. Hon. Secretary, G. P. Whyman [A], Church Lane, Oldham.

*South-Eastern Society of Architects. Kingston-on-Thames Chapter*: Hon. Secretary, S. W. Harris [L]. *Tunbridge Wells Chapter*: Chairman, G. Gregor Grant [A].

*South Wales Institute of Architects*. President, Lawford Raymond Gower [F], 1 Dorchester Avenue, Penylan, Cardiff. Hon. Secretary, W. G. Wilson [A], 103 Bute Street, Docks, Cardiff. *Central Branch*: Chairman, A. J. Gordon [A], 6 Cathedral Road, Cardiff. Hon. Secretary, Trevor Hill [A], 8 Ty Gwyn Road, The Common, Pontypridd. *Eastern Branch*: J. Selby Davies [A], Architect's Dept., County Hall, Cardiff. Hon. Secretary, T. G. Price [A], 2 St. John's Court, Oakfield Road, Newport. *Western Branch*: Chairman, H. T. Wykes [F], Borough Architect, Guildhall, Swansea. Hon. Secretary, C. G. Tagholm [F], 47 Mansel Street, Swansea.

*West Yorkshire Society of Architects, Bradford Branch*. Hon. Secretary, D. P. Chambers [A], c/o City Architect's Dept., Town Hall, Bradford.

*Inverness Architectural Association*. President, K. J. Finlayson, 11 High Street, Inverness.

*Institute of South African Architects*. President-in-Chief, T. H. Louw.

**The Royal Incorporation of Architects in Scotland. Annual Convention 1953.** The Thirty-sixth Annual Convention of the Royal Incorporation of Architects in Scotland was held at Inverness on 22 and 23 May 1953. In his speech at the Annual General Meeting, which was held in the Council Chamber in the Town House, Inverness, the retiring President, Lieut.-Colonel Alexander Cullen, O.B.E., T.D., M.T.P.I., F.S.A. (Scot.) [F], stressed the need for wider publicity to be given to illustrations and descriptions of Scottish architectural work. He also spoke of the support given by the Royal Incorporation to the policy of restoring to normal domestic use old Scottish dwellings of

architectural value. Mr. Leslie Grahame-Thomson, R.S.A., F.S.A. (Scot.) [F], was elected President. Mr. George Scott-Moncrieff, who is well known for his contributions to the history of Scottish architecture, was elected an Honorary Fellow of the Incorporation.

After the Annual General Meeting, members and their guests attended a civic reception in the Town House, where they were welcomed by Baillie D. B. Grant, senior magistrate, Inverness.

In the evening the annual dinner was held in the Caledonian Hotel. Mr. William McCrea [F], President of the Glasgow Institute of Architects, proposed the toast of 'The Royal Burgh of Inverness', to which Baillie Grant, Senior Magistrate, replied. The toast of 'The Architectural Profession' was proposed by Sir Hugh Mackenzie, C.B.E., Vice-Chairman of the North of Scotland Hydro Electric Board. Mr. A. Graham Henderson, R.S.A., Immediate Past President R.I.B.A. (deputising for the President, Mr. Howard Robertson, who was unfortunately unable to be present), and Mr. Leslie Grahame-Thomson responded. Mr. Kenneth J. Finlayson, President of the Inverness Architectural Association, proposed the toast of 'The Guests', to which Mr. John MacBean, F.S.A. (Scot.), replied and Mr. R. Carruthers Ballantyne [F], Past President of the Inverness Architectural Association, proposed the health of the Chairman. The R.I.B.A. was also represented by the Secretary, Mr. C. D. Spragg, C.B.E.

On Saturday 23 May there was an excursion to Pluscarden Priory, Morayshire, following which members were entertained to a luncheon at the Cluny Hill Hotel, Forres, by the Inverness Architectural Association.

**Essex, Cambridge and Hertfordshire Society of Architects, Southend and District Chapter: Annual Dinner and Dance.** The 1953 annual dinner and dance of the Southend and District Chapter of the Essex, Cambridge and Hertfordshire Society of Architects was held at the Westcliff Hotel on Saturday 28 February.

Mr. A. G. Whatley [L] presided and proposed the toast of the County Borough of Southend-on-Sea, to which the principal guest, the Mayor, Councillor J. E. Longman, responded. The toast of the Essex, Cambridge and Hertfordshire Society of Architects was proposed by the Borough Architect, Mr. P. F. Burridge [F], and the President of the Society, Mr. H. Conolly [F], responded.

One hundred members and their guests, including 14 official guests, were present, and the evening was an outstanding success.

**Wilts and Dorset Society of Architects: Second Annual Dinner.** The second annual dinner of the Wilts and Dorset Society of Architects was held at the Assembly Rooms, Salisbury, on 13 March.

After the Loyal Toast the toast of the R.I.B.A. was proposed by Brigadier A. C. Sykes, O.B.E., D.S.O., and Mr. Howard Robertson, M.C., A.R.A., S.A.D.G., President R.I.B.A., replied. He referred to the inquiry into the procedure of tendering with which the Institute had been charged, and said he wished to pay tribute to the quantity surveyors and the building industry, who had been very generous in responses to enquiries. The President said that the thing that mattered to all architects today was the cost of building.

Mr. C. D. Spragg, C.B.E., Secretary R.I.B.A., proposed the toast of the Wilts and Dorset Society of Architects, and paid special tribute to its Hon. Secretary, Mr. H. Benson Ansell [A], for his energetic and devoted work. The Society's President, Mr. R. E. E. Beswick, M.B.E. [A], responded. Mr. Gordon Sutcliffe

[A], President of the Hampshire and Isle of Wight Architectural Association, then proposed the toast of the Wessex Federal Society of Architects, and Lt.-Col. Eric Cole [F], President of the Wessex Federal Society, replied. Lt.-Col. Cole, who is retiring from the Presidency this year, thanked members for their support, enthusiasm and energy. The toast of 'The Guests' was proposed by a student member of the Society, Mr. L. H. Fellender, and the Mayor of Salisbury in his reply said he was glad the time was not far off when controls would be removed.

**The Devon and Cornwall Society of Architects, Truro Branch: Annual Dinner.** The Annual dinner of the Truro Branch of the Devon and Cornwall Society of Architects was held in the Red Lion Hotel, Truro, on 10 April. Mr. Roger Corfield [L], Chairman of the Branch, was in the Chair.

Grace was said by the Archdeacon of Cornwall, Canon F. Boreham, and the Loyal Toast, to H.M. the Queen and H.R.H. the Duke of Cornwall, was proposed from the Chair. A toast to the R.I.B.A. was then proposed by the Hon. Greville Howard, M.P. for St. Ives. Mr. Howard said he thought housing costs could be reduced by standardising internal fittings. Mr. K. M. B. Cross [F], Hon. Secretary R.I.B.A., responding, said that nothing short of the complete abolition of building controls—except for housing and schools—could cure the building industry of its malaise. To get good designs you had to have freedom within reason. A toast to the city of Truro was then proposed by Mr. A. Geoffrey Bazeley [A], Past Chairman of the Branch, and the Mayor of Truro, responding, said local authorities were approaching the limit of their capacity to build state-aided houses. They were looking to architects to bring about a downward tendency in the cost of building. He added that he would like to see a competition staged for young architects for the design of a house with a 20 per cent increase in floor area at a cost below that of today's houses, such as a young Canadian architect claimed to have produced.

The toast of the Devon and Cornwall Society was then proposed by Mr. L. Martin Weaver, F.R.I.C.S., and Mr. L. F. Vanstone [L], the President, responded. Mr. C. D. Spragg, C.B.E., Secretary R.I.B.A., proposed the Truro Branch and Mr. Corfield responded. Finally, Mr. J. V. Salisbury [F], past Chairman of the Truro Branch, proposed 'Our Guests and Visitors', and Mr. R. C. Henderson replied.

**Nottingham, Derby and Lincoln Society of Architects, North Lincolnshire Branch: Inaugural Dinner.** The inaugural dinner of the newly formed North Lincolnshire Branch of the Nottingham, Derby and Lincoln Society of Architects was held at the Yarborough Hotel, Grimsby, on 16 April. Among those present were Mr. T. N. Cartwright, D.S.C. [F], the President of the Society; Mr. S. F. Barrell [A], and Mr. W. Caparne Baldry [L], the Chairmen of the Lincoln and Nottingham Branches; Mr. Hope Bagenal, D.C.M. [F]; Mr. J. Fred Pye [L], the Chairman of the new branch; Mr. W. Ingham [A], the Vice-Chairman; Messrs. L. A. Hendry [A] and H. T. Bower, Joint Secretaries, and Mr. R. Morley, Treasurer. Welcoming the formation of the new Branch of the Society, the President said that for the first time there would now be an effective professional organisation for architects in the North Lincolnshire area, and he wished the new Branch every success in the future.

Following the dinner Mr. Hope Bagenal gave an address on the many problems of acoustics and sound insulation facing the architect today.



## GENERAL NOTICES

**William Hoffman Wood Architectural Scholarships.** Applications are invited from students of architecture of either sex born in Yorkshire of at least one Yorkshire parent for scholarships given by the will of William Hoffman Wood deceased, to defray the costs of architectural training and study at home and abroad. Applicants must be under 21 and should forward particulars of age, place of birth of self and parents, education and present occupation to W. H. Clarke & Company, Solicitors, 12 South Parade, Leeds, 1, by 31 July 1953.

**The University of British Columbia.** A Course in Community and Regional Planning, leading to a Master's Degree, has been established by the University of British Columbia at Vancouver. It is designed to train students for the growing field of urban and regional planning in Western Canada. The university is anxious to draw its student body from as wide an area as possible and feels that this course may be of interest to architects and students who are thinking of going to Canada. A number of fellowships, scholarships and bursaries are available for qualified students through the support of the Federal Government and the

community of Vancouver. Information from the Secretary, University Committee on Community and Regional Planning, University of British Columbia, Vancouver, 8, B.C.

**London County Council. Qualifying Examination for the Office of District Surveyor.** An examination for certificates of proficiency to perform the duties of district surveyor will be conducted in London in the week beginning 19 October 1953. The minimum age limit for candidates is 25. Possession of this certificate is necessary for appointment to vacant positions as District Surveyor (salary scales £1,190 to £2,100 a year) or as Assistant District Surveyor (salary scale £1,002 to £1,143 a year).

Subsequent examinations will be held annually.

Apply to The Architect to the Council (AR/ED/EBS), County Hall, Westminster Bridge, S.E.1, for application forms and further particulars.

### The R.I.B.A. Cricket Club

Restriction of space has excluded reports of two matches played so far this season. On 13 May the R.I.B.A. played the Vitruvians (the staffs of the architectural periodicals) and won by 116 runs. The match was played on the

A.A. ground at Elstree in perfect weather. The R.I.B.A. batted first and made 189 runs, of which 93 were contributed by the No. 1 batsman, J. Kennedy Hawkes, who was well supported by J. R. Linfield with 37. The Vitruvians started badly but the middle batsmen rallied the game somewhat, the captain, I. Murray Leslie (Editor of THE BUILDER) making a fighting 13 not out after 6 wickets had fallen.

The second match was against the London Master Builders' Association and was played on the ground of the College of Estate Management at Hinckley Wood on 20 May. The L.M.B.A. batted first and made 173, to which the R.I.B.A. replied with 103, D. le M. Brock being top scorer with 20.

The next match is on 12 July against the Blue Circle C.C. at Bromley Common, Kent.

**Mars Group.** Mr. Gontran Goulden [4] has given up his post of Honorary Secretary of the Mars Group which he has held for three years and his place has been taken by Mr. Trevor Dannatt [4], whose address is 6 Fitzroy Square, London, W.1. All correspondence dealing with the Mars Group should be sent to Mr. Trevor Dannatt with the exception of that connected with Ciam 9, which should be sent to Mr. Gontran Goulden.

## Obituaries

**Ernest Hadden Parkes [F]**, who died on 3 March last, aged 87, was known to many members of the Institute for his long association with the A.B.S. Council. Mr. Frederick R. Hiorns [F] supplies the following biographical notes:

"Following the usual process of training and some office experience, Parkes appears to have joined the Architectural Department of the (newly formed) London County Council in 1894. He soon became involved in the schemes of slum clearance and re-housing, affecting the notorious areas of eastern London then receiving attention, of which Boundary Street, Bethnal Green, and the somewhat later Tabard Street area, Southwark, were examples. Such works were to become an increasingly pressing interest of the Council as time went on, and correspondingly to absorb the thought and organising capacity of Parkes for the rest of his professional career.

"Though the earlier replacements of slum clearances took the form of block-dwellings, for their advantages in avoiding undue displacement of population, the more satisfactory alternative of 'cottage' estate development in outside areas, that enabled large-scale movements of population to be more effectively dealt with, were to follow. It appears that by a combination of both methods about 10,000 new dwellings were provided before the outbreak of the 1914 war, among the earlier cottage schemes being the Norbury, White Hart Lane, and Old Oak Estates. By this time Parkes had become a recognised leader among the highly competent staff that W. E. Riley had collected for this increasingly important work, so that, with the enormous increase of housing that occurred between 1920 and 1930, in which period an incredible amount of re-housing and estate development was accomplished, he became directing Head of that Section of the Department's work, with a major responsibility for its accomplishment.

"The programme in the period referred to included—concurrently with the block-dwellings—such charmingly laid-out estates, and skilfully designed houses, as are represented in the Bellingham, Roehampton, and Downham estates. If Parkes was leader of many teams of

promising young architects, he would also be first to acknowledge his debt to them. Anonymity was then the commonly observed but somewhat evil practice of public departments. It had, however, both advantages and the reverse; and in one case the block-dwelling estate in the Ossulton Street area (St. Pancras), the degraded "Continental design", dictated by higher authority, was a distinct lapse from Departmental standards.

"The between-war housing output of the Council must have put a severe tax upon the staff concerned and Parkes's capacity for organisation. To mention but a few examples, the cottage estates alone included Castlenau (Barnes), Watling (Hendon), St. Helier (Morden) and what is claimed as the largest scheme of its kind in the world—Becontree, in the Ilford-Dagenham areas, that comprised over 25,000 houses and shopping, schools, churches and other communal services. It was the flair that Ernest Parkes possessed for the broad view, rather than detail, combined with a forceful personality, that made his service invaluable in issues of magnitude and urgency.

"His retirement from the Department took place in 1931. Long resident in Hampstead, E. H. P. took a lively and practical interest in local affairs. From 1931 to 1945 he was a member of the Hampstead Borough Council and for some time Chairman of its Housing Committee. Similarly he was for long on the Committee of the London Association for the Blind, and as Chairman of its Housing Committee secured completion of the first block of flats specially designed for blind people. As a trustee and sometime Chairman of the Artists' Rest Home at Rickmansworth, he represented that body on the Council of the A.B.S. for more than 20 years, in which sphere his experienced judgment was highly valued. His main recreative interest, through more than 40 years of his life, was the St. John's Wood Arts Club, in which he held several offices and eventually became a Vice-President.

"His brusque, abrupt manner must be regarded as a disguise of the genuine kindness of heart that his many unobtrusive acts of benevolence expressed. His wide social and artistic interests and cultural distinction made him an attractive companion and conversa-

tionalist, and his religious background was seen as an essential element in his character."

**Morrison Hendry [4]** died on 6 December 1952, aged 60.

Mr. Hendry studied at Robert Gordon's Technical College, Aberdeen, whence he was awarded a travelling scholarship in June 1914. He joined up, however, immediately on the outbreak of war, being commissioned in the Fourth Battalion of the Gordon Highlanders. He was severely wounded while serving in France. After demobilisation he received an appointment in Greece, in connection with post-war construction. Later he held an architectural appointment with the Chinese government, lived in Shanghai and travelled much throughout China. During the recent war he was interned by the Japanese, returning to this country on release. Up to the time of his death he was on the staff of the Building Research Station.

Mr. Hendry was the author of *Planning Your Home for Tomorrow*, published by Faber and Faber in 1951.

**Arthur Harrison, F.R.I.C.S. [F]** died on Monday 22 December 1952, at the age of 78 years. Mr. John A. Senior [L] writes as follows:

"The name of Arthur Harrison is synonymous with the Tees-side Branch of the Northern Architectural Association, for he was the "architect" of the proposal that the large body of the profession in the Tees-side area, geographically remote from the headquarters of their parent body, the Northern Architectural Association, would be more closely allied if a branch were formed to cover this area. Largely through his efforts the Branch was successfully inaugurated in 1923, and from then on his leadership and enthusiasm—first as Secretary and in 1929 as Chairman—brought it to the very successful and active branch it is today.

"As a private practising architect he had the very excellent record of over 50 years of practice. Examples of schools and houses built to his design testify to his skill. Those who were fortunate enough to pass through his office as pupil or assistant would benefit from his counsel and experience in their later careers. The welfare of students was of the first importance

to him, and he sponsored their cause assiduously. He was an ardent supporter of the Architects' Benevolent Society and coerced Branch members to be likewise.

'His enthusiasm for the profession, in all its aspects, was infectious and inspiring. In manner he was courteous and kindly always, and his death is a real loss to the profession he loved so well.'

Mr. Harrison served as representative of the Branch on the Allied Societies' Conference.

**George Edward Clare** [F] died on 8 January, aged 85.

Mr. Clare served his articles with Mr. George J. Skipper, of Norwich. He started his own practice in Chelmsford in 1897 and subsequently practised at different times in London, Westcliff-on-Sea (Essex), Norwich, Leicester, Harrow (Middx.) and Petersfield (Hants). His architectural work consisted chiefly of housing, and he was responsible for work on Richings Park Estate, Iver, Bucks; Wembley

Garden Suburb; Moor Park Estate, Herts; Esher Place, Surrey; Chalkwell Hall Estate, Westcliff-on-Sea, and Letchworth Garden City. Mr. Clare also designed and had built individual houses in nearly every county of England and several in Ireland. He also designed one or two factories, including one at Wandsworth and a printing works at Petersfield, and in 1900 his design was placed first in a competition for police buildings, Chelmsford.

Over fifty years ago Mr. Clare invented and patented his 'cellular brick construction' and produced a booklet *Ideal Homes for the People* (a third revised edition of which appeared in 1952 entitled *Ideal Homes in Rural Areas*) describing its use.

**Edwin Donald Haigh** [A] died on 7 February, aged only 42. Mr. E. M. Bottomley [A], who with Mrs. Haigh is carrying on the practice, writes the following account of Mr. Haigh's career:

'Mr. Haigh was articled to Messrs. Charles

B. Pearson & Son of Lancaster and completed his studies in architecture and town planning at Manchester University. He gained a wide experience of all types of work with private architects, local authorities, public bodies and contractors. During the war he served as a civilian garrison engineer in the North-West.

'In 1945 he set up in private practice in Kendal. His work here has been most varied, mainly domestic, but including some for local authorities and industrial and business concerns in the town and surrounding districts. His most important commissions have been in connection with hotels and housing layouts.

'Although impeded by the severity of post-war restrictions, he has succeeded in introducing a more contemporary style of domestic architecture into an area where the desire for the traditional and antique is particularly strong. He had worked extremely hard to establish his practice and his loss is widely felt.'

## Members' Column

*This column is reserved for notices of changes of address, partnership and partnerships vacant or wanted, practices for sale or wanted, office accommodation, and personal notices other than of posts wanted as salaried assistants for which the Institute's Employment Register is maintained.*

### APPOINTMENTS

**Mr. Arthur Lindsay** [A] has relinquished his post as chief assistant to Messrs. Naylor, Sale & Widdows (LL), Derby, and has joined the Gold Coast Housing Department as Assistant Engineer. His new address is c/o Director of Housing, The Secretariat, Accra, Gold Coast.

**Mr. F. A. C. Maunders**, A.M.T.P.I. [F], has resigned his appointment as Architect to the Bucks County Council and is shortly to begin private practice.

### PRACTICES AND PARTNERSHIPS

**Mr. Robert J. Cole** [L] of the office of Mr. G. A. Jellicoe [F] has commenced practice at 21 High Street, Camberley, Surrey, where he will be pleased to receive trade catalogues, etc.

**Mr. A. G. Goodair** [A] has taken into partnership **Mr. K. E. Foster** [A] and **Mr. H. D. Howell**. The firm will continue to practise at Albemarle House, Osborne Road, Southsea, Hants, under the style of **Goodair, Foster and Howell**.

**Mr. Frederick S. Halford**, M.C. [A], is now practising under his own name at 100a Moffat Street, Salisbury, Southern Rhodesia, where he will be pleased to receive trade catalogues, etc.

**Mr. A. J. Saise** [A] and **Mr. N. W. Curtis** [L] are now in practice at 1 Duke Street, Manchester Square, London, W.1 (WELbeck 7744).

**Sir Giles Gilbert Scott and Son** [F/A] have taken into partnership **Mr. F. G. Thomas** [F] as from 1 January 1953. The firm will in future be known as **Sir Giles Scott, Son and Partner**.

**Mr. David Stokes** [F] has taken into partnership **Mr. Anthony Cooper** [A]. The practice will continue under the style of **David Stokes and Partners**, from 5 Cochrane Street, London, N.W.8 (PRImrose 8891).

**Mr. C. Donald Whiteley** [A] has now commenced practice at 21 Franklin Road, Harrogate, where he will be pleased to receive trade catalogues, etc.

### CHANGES OF ADDRESS

**Mr. J. E. Aylward** [A] has removed to 'Wylands', Belbroughton Road, Blakedown, nr. Kidderminster, Worcs.

**Mr. Osbert F. C. Eyre** [A] has removed to 30 Langley Avenue, Worcester Park, Surrey.

**Mr. J. C. Howlett** [A] has removed to 90 Hollybush Lane, Welwyn Garden City, Herts.

**Messrs. North and Partners** (Mr. Guy North [F] and Mr. A. R. G. Collins [L]) have removed their offices to 40 Broadway, Maidenhead.

**Mr. D. Garth Pepperell** [A] of **Messrs. George Brown and Partners**, announces that the practice has removed to new offices at 'Brunel House', College Green, Bristol, 1. The telephone number (Bristol 27003) remains unchanged.

**Messrs. Bernard Taylor and Associates** [A/A] of Macclesfield and Birkenhead have removed their offices to The Market Place, Macclesfield, Cheshire. The telephone number (Macclesfield 3843) remains unchanged.

**Messrs. Walker and Pride** [L] have changed their address from Church Square, St. Andrews, to Mercat House, Church Street, St. Andrews, Fife (St. Andrews 1244).

**Mr. L. A. Williams** [A] has removed to 41 Neville Street, Cathedral Road, Cardiff, and will be pleased to receive trade catalogues, etc.

### PRACTICES AND PARTNERSHIPS WANTED AND AVAILABLE

Licentiate (39) seeks partnership, or would take over practice by arrangement, in London or Home Counties. Wide experience, including industrial work. Box 42, c/o Secretary, R.I.B.A.

Vacancy arises for partner in old-established firm of architects in N.W. Midlands. Box 43, c/o Secretary, R.I.B.A.

Long established firm of architects in London require junior partner. Probationary period as senior assistant would be necessary and experience of private practice and commercial buildings essential. Apply in writing to Box 45, c/o Secretary, R.I.B.A.

Associate, Dip.T.P.(Lon.), (33), seeks partnership, preferably in southern England. Wide and varied experience of London private practice covering domestic, commercial and industrial work, and experience of own domestic practice. Car owner. Some capital available. Box 46, c/o Secretary, R.I.B.A.

### WANTED AND FOR SALE

For Sale. *The Drawings of Leonardo da Vinci*, edited by A. E. Popham. Published: Jonathan Cape. Price 35s. *Introduction to Structural Mechanics*, by T. J. Reynolds and L. E. Kent. Price 7s. 6d. *Structural Steelwork*, by T. J. Reynolds and L. E. Kent. Price 7s. 6d. 'Unique' 6 in. slide rule. Price 7s. 6d. Box 41, c/o Secretary, R.I.B.A.

Three hinged deal trestles, suitable to take a large drawing board, are offered as a gift to a young member of the Institute setting up practice. Applications to Box 44, c/o Secretary, R.I.B.A.

Member requires a three screw dumpy level in sound condition. Please send particulars with price required to Box 47, c/o Secretary, R.I.B.A.

*The Royal Institute of British Architects, as a body, is not responsible for statements made or opinions expressed in the JOURNAL.*



## The Architects' Special Motor Car Insurance at Lloyd's

The Architects' Benevolent Society's Insurance Committee in conjunction with a firm of Lloyd's Insurance Brokers have devised a Special Motor Car Policy for Architects. This policy and the special advantages to be gained from it are available only to members of the Royal Institute of British Architects and its Allied and Associated Societies.

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